BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 18 1938

THE CLINICAL ASPECTS OF THE TRANSMISSION OF THE EFFECTS OF NERVOUS IMPULSES BY ACETYLCHOLINE*

BY

FRANCIS R. FRASER, M.D., F.R.C.P.

Professor of Medicine, University of London; Director of the Department of Medicine, British Postgraduate Medical School

LECTURE II

Pharmacology of Carbaminoyl-choline

Carbaminoyl-choline was introduced by Kreitmair (1932), working in the pharmacological laboratories of Merck of Darmstadt. He considered that it excelled acetylcholine in many ways, appearing to be more powerful, and active in doses usually associated with hormones or vitamins. It is much more stable than acetylcholine in solution, withstands boiling, and is active even when administered by the digestive tract.

Simonart and Simonart (1934) showed that it is less active than acetylcholine and that its comparative stability accounted for the apparent greater activity as a parasympathetic stimulant, but that it is stronger in its nicotine-like properties. Kreitmair (1932) worked with dogs, cats, and frogs, and showed that in general it has the same qualitative effects as acetylcholine, acting typically as a mimic of parasympathetic stimulation, and that atropine inhibits its effects. Velten (1933) studied its action on the stomach, noted contraction of the muscle and an increased flow of gastric juice, and found that it induced contractions in the puerperal uterus of cats. He considered that there is no accumulation or habituation in cats with daily doses over long periods, but that injections of subtoxic doses repeated twice daily for several days caused cachexia and death in some cats though not in others, but at necropsy no reason for death was found. In man, however, Starr (1937) has observed evidence of accumulation with subcutaneous injections, and found it necessary to lower the dose. Nöll (1932) studied the effect of subcutaneous injections and of oral and rectal administration in cats following a barium meal, and demonstrated a powerful action on the musculature of the intestines in two and a half hours. He noted great salivation and an increase in the flow of gastric juice. Dautrebande and Maréchal (1933) gave 0.01 mg. per kilogramme of body weight to dogs, and noted tachycardia and a fall in blood pressure followed by bradycardia, and also stimulation of respiration. Dautrebande (1933) gave the same dose to dogs by intracarotid injection, and concluded that the tachycardia is due to a reflex from the carotid sinus and that the carotid sinus is responsible for the immediate stimulation of respiration and also for a secondary stimulation at the time of the fall in blood pressure. Destrée (1937) gave 0.125 mg. per kilogramme to dogs with Pavlov fistula and found that it produced an increase of total and free acid and of mucus in the gastric secretion. Atropine prevented this action.

In so far, therefore, as its effects on animals are concerned, carbaminoyl-choline differs from acetylcholine mainly in its greater stability, so that prolonged effects can be obtained by subcutaneous injection and even by oral or rectal administration.

Actions of Carbaminoyl-choline in Man

Dautrebande and Maréchal (1933) reported that the administration of 0.1 mg. to man by intravenous injection produced a fall in blood pressure, a feeling of heat, dilatation of superficial vessels, increased activity of movements within the abdomen, salivation, and lacrimation. They also found that the intramuscular injection of 0.2 to 0.3 mg. caused a fall of blood pressure that persisted for twenty to forty minutes.

INTRAVENOUS INJECTION

In 1932 E. A. Carmichael and I began observations on the effects in man of intravenous injections. These preparations were kindly supplied by Merck and Co., and consisted of a solution of carbaminoyl-choline chloride in sterile ampoules (1 c.cm. containing 0.1 mg.) under the name of lentin, and later of ampoules containing 0.25 mg. in 1 c.cm. under the name of doryl. We gave fifty-eight injections to eleven subjects—patients in hospital convalescing from acute infections or admitted for chronic conditions such as osteo-arthritis, tabes dorsalis, etc. Starting with a dose of 0.01 mg., the dose was increased until a definite effect on the pulse rate or blood pressure was obtained. The pulse rate for each three-second period was calculated from a continuous polygraphic record, and blood-pressure readings by the auscultatory method were taken as often as possible. Typically, a fall of both systolic and diastolic blood pressures occurred, accompanied by a rise of pulse rate ten to twenty seconds

* The Croonian Lectures delivered before the Royal College of Physicians of London on May 24, 26, and 31, 1938. Lecture I was published on June 11 at page 1249.

following the injection. Fig. 4 shows the characteristic effect on the pulse rate. The blood-pressure readings are too inaccurate to be worth recording, but falls from a systolic of 130 mm. Hg to 90 mm. Hg and from a diastolic of 80 mm. Hg to 60 mm. Hg were commonly noted. The maximum effect on both blood pressure and pulse rate was reached in from thirty to forty seconds following the injection, and both had returned to the previous level at the end of sixty seconds. These effects appeared with a dose of from 0.03 to 0.05 mg. The previous injection of 1 mg. of atropine sulphate prevented the fall of blood pressure and the rise of pulse rate. In one patient little if any rise of pulse rate was obtained even when other symptoms occurred, and this was noted also following injections in patients who had previously reacted typically to smaller doses. On two occasions only did the pulse rate fall, and in both instances the blood pressures dropped as usual and typical rises of pulse rate occurred in the same patients on other occasions. In neither instance was the fall followed by a rise of pulse rate.

The effect of the intravenous injection of carbaminoylcholine on the pulse rate in producing a rise and only

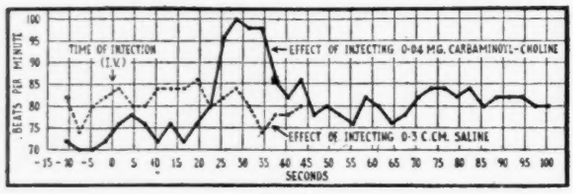

BEATS PER MINUTE
TIME OF INJECTION (I.V.)
← EFFECT OF INJECTING 0·04 MG. CARBAMINOYL-CHOLINE
EFFECT OF INJECTING 0·3 C.CM. SALINE
SECONDS

FIG. 4.

occasionally a fall differs, therefore, from that of acetylcholine, which produced in nearly every instance a fall followed by a rise.

Other symptoms that accompanied the rise of pulse rate were flushing of the head and neck, a feeling of heat throughout the body, a sensation of fullness in the head or headache, coughing, and a feeling of tightness in the throat or upper thorax. These symptoms were transient, variable in degree, and lasted only a few seconds. Less constantly, sweating, salivation, and lacrimation occurred. If the injections were repeated after a few minutes the effects were the same, but after a number of injections had been given a few patients complained of abdominal unrest, and two of them defaecated shortly after the termination of the observations. In four patients effective injections were repeated following the intravenous injection of 1 mg. of atropine sulphate, and in each the symptoms were entirely prevented or very greatly diminished in intensity.

Three patients received doses of 0.02, 0.05, and 0.25 mg. injected into the femoral artery. A slight flush occurred in the distribution of the femoral artery, but no flushing or other symptoms in the rest of the body. In these doses it had much less effect by this route than we had obtained with doses of acetylcholine of 5 to 25 mg., but we hesitated to use larger amounts because of the stability of this ester.

SUBCUTANEOUS AND INTRAMUSCULAR INJECTION

From these results it does not appear that carbaminoylcholine offers any advantages over acetylcholine itself for therapeutic purposes if given by intravenous injection, the effects being extremely transient when safe doses are employed. By subcutaneous or intramuscular injections conspicuous and sustained effects are obtained, and during the past five years I have been able, with the help of different colleagues, to study the effects on more than twenty-five patients. The results vary considerably from subject to subject, and in the same subject from day to day. They were patients in hospital suffering from chronic illnesses that were unlikely to interfere with the reactions to the drug. An injection of 0.5 mg. will produce definite effects, which, however, are sometimes so pronounced as to be upsetting to the patient; a dose of 0.25 mg. will usually produce some recognizable effects, does not upset the patient, but seldom produces all the typical reactions.

Fig. 5 shows the characteristic response to 0.5 mg. Within a few minutes, usually two, the subject becomes

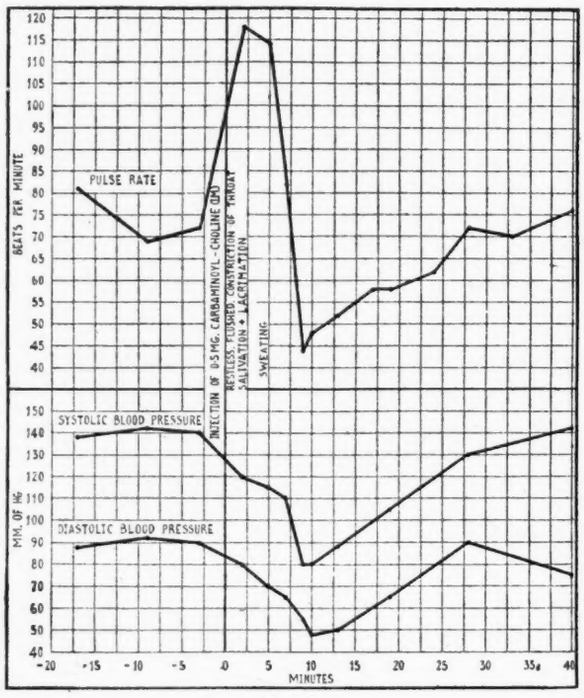


FIG. 5.

restless, feels hot, flushes on the face, neck, and upper thorax, and swallows because of increased salivation and a vague feeling of constriction in the throat, and tears collect in the conjunctival sac because of increased lacrimation. Throbbing in the head may be complained of early, but may not appear for ten or more minutes. With the onset of the symptoms the pulse rate rises and the blood pressures fall, but after a few minutes, usually five, the pulse rate also falls to below the initial rate. In five to ten minutes after the injection sweating appears all over the body, and in from ten to fifteen minutes borborygmi are audible, the patient is conscious of abdominal unrest, and there may be some nausea. After twenty minutes the symptoms subside, and the pulse rate and blood pressures gradually return to normal, usually regaining the initial levels at the end of forty minutes. The abdominal unrest may continue after the other symptoms have disappeared, and frequently the bed-pan is called for at the end of thirty to forty minutes, when defaecation may occur, or, more often, the bladder only is emptied. This dose produced in one subject an alarmingly rapid fall of blood pressure and of pulse rate, with a feeling of faintness and appearance of collapse; atropine sulphate was accordingly injected intravenously, this being followed by a rapid disappearance of all the symptoms.

If the dose is raised to 1 mg. the effects are increased in intensity, and in different subjects one or other effect attains especial prominence. Fig. 6 shows the result in a patient with muscular dystrophy in whom the most striking effect was the intense pain which he located at the root of the penis. This pain persisted after he emptied his bladder and remained severe at the end of forty minutes, when other symptoms had disappeared or become mild, and he was given atropine, which promptly relieved the pain. Following the injection of 1 mg. in the same subject as in Fig. 5, the slowing of the pulse and the fall of blood pressure were so rapid that atropine was given at the end of six minutes; but the most striking phenomenon was the flow of saliva, which frothed at her mouth in a large ball of fine bubbles. On the other hand, 1 mg. in another patient caused little disturbance apart from the usual effects on pulse rate and blood pressure, and when

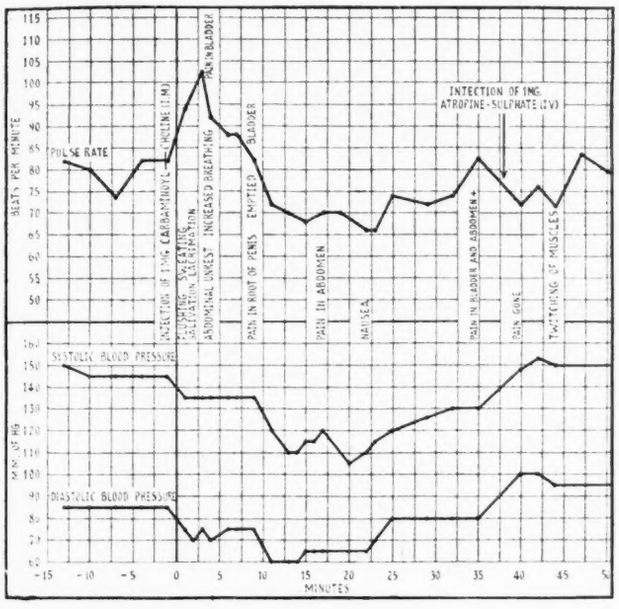


FIG. 6.

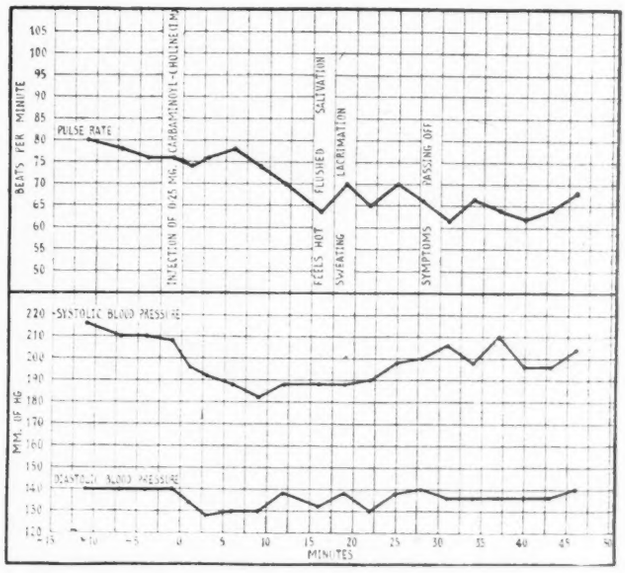


FIG. 7.

combined with 1 mg. of atropine sulphate the atropine prevented the effects on the cardiovascular system but not entirely the increased movements of the intestines. The effects in a man with essential hypertension were in no way unusual, 1 mg. producing enough retching and vomiting to necessitate an injection of atropine to relieve his distress, while 0.25 mg. produced mild effects only (Fig. 7). In a woman with exophthalmic goitre the effects of 1 mg. on the cardiovascular system were comparatively mild, the bladder was emptied six minutes after the injection, and abdominal unrest persisted for some hours, even after defaecation occurred at the end of forty minutes.

As a result of their observations on the action in animals, Kreitmair (1932), Nöll (1932), and Velten (1933) stressed the effects on the gastro-intestinal tract. We studied the effects of 0.2 mg. to 0.4 mg. in three human subjects by subcutaneous injections, watching the outlines of the stomach and intestine with the *x*-ray screen following a barium meal. Fifteen minutes after the injection the movements of the stomach, small intestine, and colon all appeared to increase. The stomach emptied more rapidly than usual, and conspicuous local constrictions appeared in the small intestines and colon, while from time to time a constriction would move vigorously downwards for a short distance. The normal movements seemed to be increased in vigour and frequency, but the most striking effect was the production of local constrictions. These changes were observable for one hour following the injection. Two patients with colostomy were given 0.2 mg. and 0.4 mg. respectively by subcutaneous injection. Between ten and fifteen minutes later increased movements were observed in the exposed parts of the colon, which pouted and were vigorously contracted and withdrawn while much wind was passed. With the smaller dose no other effects were observed, but with the larger dose there was sweating and abdominal discomfort and the activity of the exposed gut was much more vigorous. The gastric contents were examined following an alcohol test meal in five subjects. At the end of one hour 0.1 mg. or 0.2 mg. of carbaminoyl-choline was injected subcutaneously. No increase of hydrochloric acid occurred, and in three subjects it was diminished, although histamine caused increased acidity in all of them, and following the carbaminoyl-choline injections it sometimes proved difficult to obtain further specimens, possibly because the stomach emptied rapidly.

Starr (1937) reported the effects on twenty-six healthy students of giving 0.1 to 1 mg. by subcutaneous injection and 0.4 to 1 mg. by the mouth. He obtained a fall of blood pressure and a rise of pulse rate followed by a fall, and noted symptoms similar to those found by us. He considered that it is cumulative both by mouth and by subcutaneous injection, and that if repeated injections are given the dose must be reduced, or headache and general malaise result.

Rutenbeck (1935), in a study of ionization as a method of introducing drugs into the body, found that with a solution of 1 mg. per c.cm. of carbaminoyl-choline general effects were obtained from the absorption of the drug. He obtained local vasodilatation that was not so strong as with histamine, and five to ten minutes after the circuit was closed flushing in the head, sweating, abdominal unrest, and increased intestinal peristalsis were experienced. Kramer (1937) also obtained general effects of carbaminoyl-choline by the same method.

Velhagen (1933) observed local effects in the eye following the instillation of a 0.75 per cent. solution into the conjunctival sac. He found that it produced a strong constriction of the pupil and that it lowered the tension

in the eyeball if given two or three times a day. With Dr. Kent Harrison I have tried the effect when given in this way. The ordinary solution for injection (doryl), which contains 0.25 mg. per c.cm., has no effect even when combined with 0.05 per cent. solution of prostigmin, but we found that a 0.75 per cent. solution as used by Velhagen produced a strong constriction of the pupil in two subjects that persisted for six hours, and also engorgement of the conjunctival vessels that passed off somewhat more quickly. In five other subjects we put one drop of a 0.75 per cent. solution with one drop of a 1 per cent. solution of prostigmin into the conjunctival sac and obtained congestion of the conjunctival vessels and constriction of the pupil that persisted for eighteen hours in all of them, and in four a lowering of the intra-ocular tension could be detected with the finger-tips. This lowering of eyeball tension is presumably due to the relaxation of the unstriped muscle fibres of the orbit, and was especially noticeable in a subject with exophthalmic goitre. In no instance could we detect any dilatation of retinal arteries or symptoms of absorption of the choline ester into the general circulation.

These results of the administration of carbaminoylcholine to man show that it has in general the same actions as acetylcholine; but because of its increased stability it is effective by intramuscular and subcutaneous injection, and these actions can be maintained for a much longer time than is possible with acetylcholine. By oral administration its effects appear to be less certain, and when given repeatedly malaise and headache result. It can be administered slowly over long periods by ionization, and local effects in the eye can be obtained by conjunctival instillation. Further, in comparison with acetylcholine the effects on the gastro-intestinal tract and the bladder appear to be greater and those on the cardiovascular system to be less. The rise of pulse rate when a fall might be expected is probably due to a reflex action from the carotid sinus, resulting from the fall of blood pressure, overpowering the direct vagomimetic inhibiting action on the heart as suggested by Dautrebande (1933).

Pharmacology of Acetyl-β-methyl-choline

In 1911 Reid Hunt and Taveau reported the production of an ester of methyl-choline, acetyl-β-methyl-choline, with well-marked parasympathetic and muscarine-like actions as of acetylcholine but feeble nicotine-like effects. They found that it was less readily hydrolysed than acetylcholine. Simonart (1932) confirmed these properties and actions in cats, and found that it was absorbed and active when administered by the gastro-intestinal tract. Comroe and Starr (1933), working with frogs, cats, rabbits, and dogs, found that it has actions similar to those of acetylcholine, less powerful though more prolonged on intravenous injection, and that it is more effective on subcutaneous injection, and active when injected into the lumen of the intestine. In the fully atropinized animal they obtained no rise of blood pressure, pointing to the absence of nicotine-like effects on sympathetic ganglia or adrenal medulla, and the only nicotine-like effects obtained by Simonart were feeble ones on denervated muscle. Schnedorf and Ivy (1937) found that in eight rhesus monkeys, with histamine-resistant achlorhydria but otherwise healthy, acetyl-β-methyl-choline alone by repeated injections caused a flow of acid gastric juice in half of the animals, and that all responded when it was combined with histamine. Flexner, Bruger, and Wright (1938) showed that it caused contraction of the gall-bladder in cats.

Action of Acetyl-β-methyl-choline in Man

Acetyl-β-methyl-choline is usually administered to man as the chloride, which is supplied by Merck under the name of mecholin or mecholyl. Villaret, Justin-Besançon, Cachera, and Said (1932) gave 25 mg. by subcutaneous injection to healthy subjects, and found a fall in blood pressure that lasted for one or two hours, accompanied by vasodilatation and symptoms of vagus stimulation. Villaret, Justin-Besançon, Schiff-Wertheimer, and Gallois (1932) applied it to the eye by instillation of two drops of a 10 per cent. solution into the conjunctival sac and produced powerful miosis and a reduction of ocular tension. They found that it had a powerful effect by subconjunctival injection also. Starr, Elsom, and Reisinger (1933) gave it by subcutaneous injection to normal subjects in doses up to 25 mg., and observed flushing, a feeling of heat, sweating, salivation, lacrimation, increased intestinal peristalsis, epigastric discomfort, increased respiratory excursion, palpitations, and a sense of discomfort in the epigastrium and of constriction under the sternum. The effects appeared in two to three minutes and passed off in twenty to thirty minutes. The pulse rate rose and the blood pressure fell with the onset of symptoms, and a few minutes later the pulse rate fell in some cases to below the original level, an action similar to that of carbaminoylcholine by the same route. They gave it by the mouth also in doses of 100 mg. to 1 gramme, and found that when administered by this route the effects were much the same but less intense, persisted longer, and appeared in thirty to forty minutes. When given orally the rise in pulse rate was not seen.

Fig. 8 shows the action of 25 mg. by intramuscular injection in one of our patients. The symptoms of

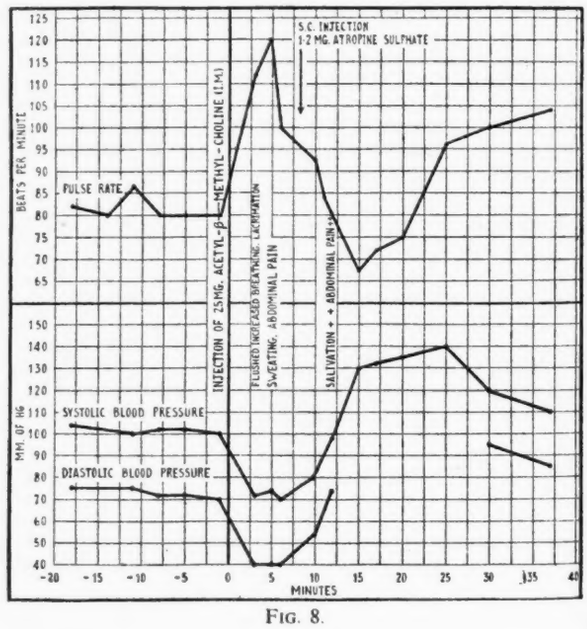

S.C. INJECTION 1·2 MG. ATROPINE SULPHATE
INJECTION OF 25MG. ACETYL-β-METHYL-CHOLINE (I.M.)
FLUSHED INCREASED BREATHING LACRIMATION SWEATING. ABDOMINAL PAIN
SALIVATION + + ABDOMINAL PAIN + +
PULSE RATE
BEATS PER MINUTE
SYSTOLIC BLOOD PRESSURE
DIASTOLIC BLOOD PRESSURE
MM OF HG
MINUTES

FIG. 8.

collapse and the fall of blood pressure appeared so rapidly that 1.2 mg. of atropine sulphate was given by subcutaneous injection at the end of eight minutes. In a second subject 1.2 mg. of atropine sulphate was given twenty-four minutes previously and was not sufficient to prevent the cardiovascular effects of 50 mg.

Abbott (1933) studied especially the actions on the gastro-intestinal tract. When given by subcutaneous injection or by the mouth it caused increased movements

of the stomach, small intestine, and colon, and after oral administration the cardiovascular effects were less intense. He obtained no increase in the amount of gastric juice, but in a few cases of hypochlorhydria there was a slight rise in the concentration of free hydrochloric acid.

Page (1935) observed the usual muscarine-like effects following the subcutaneous injection of 25 mg., but commented on the absence of slowing of the pulse. He found that the T-waves of the electrocardiogram become negative following the injection, and that this effect, in common with the other symptoms, is inhibited by atropine.

Ritvo (1936) observed the effects of 20 to 30 mg. by subcutaneous injection on the stomach and intestines by radiographs following a barium meal. He found an increase of tone in stomach and intestines five to ten minutes after the injection, followed by powerful deep peristaltic waves. In the colon the lumen narrowed and haustrations increased in number and depth. These effects lasted for thirty minutes to several hours, and were accompanied by evidence of parasympathetic stimulation and by headache, sweating, and a fall in blood pressure.

Myerson, Schube, and Ritvo (1937) observed the effects on the colon following a barium enema. They gave 30 mg. by subcutaneous injection, and found increased tone in five minutes, followed by more and more marked haustrations, coming and going for over one hour. The increased tone lasted sometimes for twenty-four hours, and as a rule three or four evacuations occurred. They found that the cardiovascular effects were of short duration in contrast, but considered that they were disadvantageous to the use of the drug in atony of the colon. Atropine sulphate in doses of 1/100 grain by subcutaneous injection inhibited these actions on the colon.

Myerson, Loman, and Dameshek (1937) found that following the subcutaneous injection of 30 mg. the spinal fluid pressure rose by 30 to 140 mm. of water during the lowering of the blood pressure in eighteen psychotic patients.

Myerson, Rinkel, and Dameshek (1936) studied the effect on the gastric juice following the subcutaneous injection of 25 to 40 mg. They concluded that it produces an increased flow of alkaline juice with a high mucus content and that free hydrochloric acid and total acidity are reduced. These effects began to pass off after twenty minutes and had disappeared by forty minutes. Loman, Rinkel, and Myerson (1937) found the same action on the gastric juice when the drug was given by ionization, but the effect was less explosive and the side actions less pronounced; by giving prostigmin in addition they were able to maintain an alkaline juice for two hours or more.

Martin (1937) obtained all the usual actions following absorption by means of ionization, using a 0.25 or 0.5 per cent. solution with a current of 20 to 30 milliamperes for twenty minutes. He observed that the blood sugar fell, but not convincingly, and that there was an increase of gastric juice with a fall in acidity. No case of anacidity developed free acid.

Van Dellen, Bruger, and Wright (1937) put 25 to 250 mg. in a few drops of solution into the anterior nares. Evidence of immediate absorption was seen—hyperaemia and a sensation of warmth in the nose, lacrimation, salivation, flushing of head, neck, and thorax, sweating, and a sharp fall of blood pressure. The symptoms varied greatly from individual to individual, and at times the respirations were accelerated; the effects passed off in four to six minutes.

Myerson and Thau (1937) found the effective dose when given by instillation into the conjunctival sac to be inconstant. A 10 per cent. to 20 per cent. solution usually sufficed to produce a pin-point pupil in twenty minutes. The reaction to light and convergence was retained until miosis was extreme, the palpebral fissures were narrowed, the retinal arteries and veins dilated, and the ocular tension fell 3 to 5 mm. A full effect could be obtained with a 1 per cent. solution containing 1 per cent. prostigmin. General symptoms of absorption did not occur.

From these observations we can conclude that, like carbaminoyl-choline, acetyl-β-methyl-choline has actions similar to those of acetylcholine and is more stable, producing typical effects when given by subcutaneous or intramuscular injection, by the mouth, or by ionization. By injection a dose of 10 to 25 mg. appears to be comparable to 0.25 to 0.5 mg. of carbaminoyl-choline. The effects of both esters are ordinarily of the muscarine-like type, and the only nicotine-like effects observed by us were seen with carbaminoyl-choline, in muscle twitchings and cramps in a patient with muscular dystrophy, and in increased spasticity of muscles in a case of arteriosclerosis of the cerebral vessels. With both esters the results following injection appear in a few minutes, but while the action on the cardiovascular system passes off in from thirty to forty minutes, the action on the gastro-intestinal tract and bladder may persist for several hours. It is generally accepted that the action of carbaminoyl-choline on the gastro-intestinal tract is relatively greater than on the cardiovascular system, and that the reverse is the case with acetyl-β-methyl-choline. With both, local effects can be obtained on the eye and on the nose by instillation into the conjunctival sac or anterior nares.

Therapeutic Uses of Doryl and Mecholin

Both carbaminoyl-choline chloride (doryl) and acetyl-β-methyl-choline chloride (mecholin or mecholyl) have been used in a great variety of diseases to obtain either parasympathetic or vasodilator effects, but the reports in the literature of such uses have, with certain exceptions, consisted of a few case reports, from which it is often difficult to judge conclusively of the value of these substances.

In Ophthalmology.—Miloro (1935) considers that in chronic glaucoma the instillation of doryl is often efficacious when physostigmin and pilocarpine fail. He found that it produced a powerful miosis for two and a half hours and that the ocular pressure was lowered for twenty-four hours.

In Ozaena.—Guns (1934) believes that doryl has a place in the treatment of ozaena, and found that the local application of a 0.04 or 0.05 per cent. solution caused increased secretion.

Contraindicated in Asthma.—Starr, Elsom, and Reisinger (1933) caused an attack of asthma by mecholin in an apparently healthy person who had been subject to asthma; and Villaret, Vallery-Radot, Justin-Besançon, and Claude (1934) reported that, in fifteen persons subject to asthma with various causal factors, attacks were produced by the subcutaneous injection of 0.02 to 0.04 gramme. They suggested that this effect might be used as a diagnostic test. My colleague, Dr. J. G. Scadding, has demonstrated, by means of lipiodol, constriction of the smaller bronchi following 25 mg. of mecholin by intramuscular injection in a woman aged 37 convalescent from pneumonia and with no history of asthma.

IN PAROXYSMAL TACHYCARDIA

Starr (1935, 1936a) found mecholin of value in stopping attacks of paroxysmal tachycardia. It is successful in auricular or supraventricular paroxysmal tachycardia, but fails in paroxysmal tachycardia of ventricular origin and is of no value in other types of tachycardia. Including his own cases he reported that seventy-five attacks in thirty-seven patients were treated and that sixty-six were stopped, there being nine failures. After carotid sinus pressure had failed to stop the attack the drug alone was successful in 58 per cent. of the sixty-six at the first injection; twenty-two per cent. required a second dose, and in 20 per cent. carotid pressure during the action of the drug succeeded. He recommends 10 mg. by subcutaneous or intramuscular injection in young or light subjects and up to 60 mg. for larger persons. It may cause stoppage of the heart for a few seconds, but the heart starts to beat again as in any method of vagus stimulation. In one patient a lengthening of the P–R time and ventricular extrasystoles occurred before normal rhythm returned; in another, complete heartblock was seen, but the tachycardia returned and persisted. Mecholin had no permanent effect in auricular fibrillation and no constant effect in auricular flutter. Fig. 9, for which I am indebted to my colleague

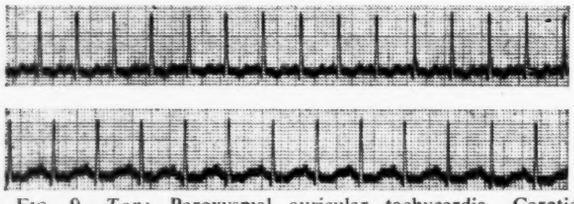


FIG. 9.—*Top:* Paroxysmal auricular tachycardia. Carotid sinus pressure failed to alter the rhythm. *Bottom:* Normal rhythm returned five and a half minutes after intramuscular injection of 25 mg. of mecholin. (Dr. Paul Wood's case.)

Dr. Paul Wood, shows the rhythm before and five and a half minutes after the injection of 25 mg. intravenously in a case of auricular paroxysmal tachycardia. In general no action on auriculo-ventricular conduction is observed following the administration of mecholin or doryl in normal hearts, and during the phase of slowing of the heart rate the action is on the pace-maker only. The therapeutic effect in paroxysmal tachycardia occurs a few minutes after the injection, when the action in normal subjects is to produce a rise of heart rate, and is presumably due to a direct vagomimetic inhibitory action which may be masked by the carotid sinus reflex. Nahum and Hoff (1935) found that mecholin converted normal rhythm into auricular fibrillation in four patients with hyperthyroidism. Birk, Lethaus, and Plugge (1936) gave doryl intravenously in doses of 0.05 to 0.12 mg. in eight cases of paroxysmal tachycardia, and were successful in stopping the attacks in seven. They do not differentiate between supraventricular and ventricular tachycardia, and prefer to use digitalis or strophanthin when congestive failure is present, reserving doryl for cases with compensation. Blumberger and Dericks (1937) gave doryl in doses of 0.1 to 0.25 mg. intravenously to a young girl with mitral stenosis and auricular paroxysmal tachycardia, and caused fibrillation of the auricles.

VASODILATOR ACTIONS

Both doryl and mecholin have been employed in various vasospastic conditions. Starr (1937) considered that doryl relieved the pain in intermittent claudication. He (1936b) found that doryl by subcutaneous injection was more efficient in relieving pain in peripheral vascular disease than mecholin by oral administration in three cases, but was less efficient in one case. Hypertensive headaches were sometimes relieved, but no permanent effect was noted on the blood pressure in hypertension. Kovaks, Saylor, and Wright (1936) gave mecholin by ionization and found it disappointing in hypertension, chronic arthritis, peripheral vascular occlusions, embolism, etc., but more satisfactory in causing healing of varicose ulcers and in cases of Raynaud's syndrome with ulcers, and in sclerodermia. Cohn and Benson (1937) considered that mecholin by ionization was of definite value in relieving pain and increasing efficiency in three out of four cases of arteriosclerosis of the peripheral arteries of the leg and in seven of thirteen cases of thrombo-angiitis obliterans. Kramer (1937) obtained similar results in thirty patients with various types of peripheral vascular lesions. Kovaks (1934) treated various forms of chronic arthritis with mecholin by ionization. In addition to slight general effects, he noted local warmth and flushing, increased capillary flow, reduction of swelling, diminished pain, and increased freedom of movement. He considered it an alternative to other forms of physical treatment. Martin and Eaton (1937) obtained similar results. Rutenbeck (1936) gave doryl by ionization to cases of arthritis, muscular rheumatism, neuritis, pleurisy, paralysis, and habitual headaches, and reports favourable effects. Mecholin by ionization has given encouraging results also in thrombophlebitis.

INTESTINAL STASIS

Starr (1937) considered doryl more efficacious in relieving abdominal distension than mecholin. I have not found any satisfactory report of the use of doryl in a series of cases of post-operative intestinal atony and abdominal distension, but it is being used extensively for these conditions, and I know of surgical clinics in which its administration subcutaneously in doses of 0.25 mg. is a routine measure in post-operative distension. It should be followed in one hour by an enema, and if a satisfactory result is not obtained the treatment should be repeated and again followed an hour later by an enema if necessary.

RETENTION OF URINE

Schulze (1935) found the subcutaneous injection of 0.25 mg. of doryl successful in cases of retention of urine in the puerperium and following abdominal operations. As a rule the bladder is emptied twenty or thirty minutes later, and side effects are not troublesome. Moir (1937) reported success in twenty-two out of thirty-eight cases of post-operative and post-partum retention. Maxwell (1937) had successes in fifteen out of seventeen cases of retention following various surgical procedures. Officer and Stewart (1937) observed a considerable rise of intravesical pressure, and thought it useful in post-operative retention and deserving of further trial in retention associated with spinal cord injuries or tumours or diseases. My colleague, Dr. E. P. Sharpey-Schafer, has demonstrated a rise of intravesical pressure ending in extrusion of the catheter following the intramuscular injection of 0.5 mg. of doryl in a case of hysterical retention. Gernon, Ewert, and Herrold (1935) gave daily doses of 200 mg. of mecholin by the mouth in ten cases of bladder disturbance associated with diseases of the spinal cord, and reported that those with incontinence regained control and those with retention were able to empty the bladder but required continued treatment. They found the method encouraging in retention following resection of the prostate. Schulze (1932)

and Laube (1935) gave doryl by subcutaneous injection followed by oral administration in eclampsia, and considered that the flow of urine was increased and symptoms of eclampsia relieved.

OTHER SYMPTOMS

Starr (1936b) reported the relief of symptoms by mecholin in five cases of Ménière's disease. Gougerot and Albeaux-Fernet (1936) recorded improvement in alopecia following local injection of mecholin. Dameshek and Feinsilver (1937) consider that the failure of mecholin to produce its usual effects in scopolamine poisoning may be of diagnostic value.

There are two conditions in which these substances with actions imitative of parasympathetic stimulation might be expected to act beneficially—cardiospasm and megacolon, for in each a deficient parasympathetic action has been postulated. Starr (1937) found that doryl increased the oesophageal peristalsis in cardiospasm but did not relax the sphincter. I have been able to try doryl in doses of 0.25 and 0.5 mg. by intramuscular injection in a typical case. The oesophagus was shortened and straightened as from an increase of tone in the muscles and the peristaltic waves were increased in depth, but no relaxation of the sphincter occurred and the contents were not forced into the stomach. I have tried the effects of 0.5 mg. of doryl by intramuscular injection in one case of megacolon. The visible peristalsis was greatly increased, as judged by the appearance of the patterns on the abdominal wall; but no emptying of the colon occurred nor passage of wind, so that presumably the sphincters were not relaxed. No organic obstruction was present. From these observations it would seem that if the difficulty is due to achalasia of the sphincters, as Hurst maintained, and if the failure to relax is due to lack of parasympathetic action, as the work of Knight (1934) on the oesophagus suggests, then there must be some other factor that prevents the relaxation in spite of the powerful parasympathetic-mimetic action of the drug as seen in the increased tone and peristalsis.

SUMMARY

It seems clear that doryl and mecholin may have therapeutic value in a great variety of conditions and that many more observations are required before their uses can be defined. In spite of numerous reports on their administration for their vasodilator properties in various spastic conditions of the peripheral arteries and in chronic rheumatic states, the evidence for their value in these conditions is not convincing, apart from the temporary relief of pain. In chronic glaucoma and spastic conditions of the retinal arteries the reports of their use are more encouraging. In essential hypertension there is general agreement that they are valueless except for the relief they afford in some cases of severe hypertensive headache. At present their value appears to have been established for post-operative intestinal atony, for urine retention following surgical operations and labour and in lesions of the spinal cord, and for supraventricular paroxysmal tachycardia. The evidence so far is in favour of doryl in the first two conditions and of mecholin in the third.

REFERENCES

Abbott, W. O. (1933). *Amer. J. med. Sci.*, **186**, 324.
Birk, E., Lethaus, H., and Plugge, H. (1936). Reprint from *Fortschr. Ther.*, **12**, 129.
Blumberger, K., and Dericks, H. (1937). *Münch. med. Wschr.*, **84**, 1165.
Cohn, T., and Benson, S. (1937). *Arch. physical Ther.*, **18**, 583.
Comroe, J. H., and Starr, I. (1933). *J. Pharmacol.*, **49**, 283.
Dameshek, W., and Feinsilver, O. (1937). *J. Amer. med. Ass.*, **109**, 561.
Dautrebande, L. (1933). *Paris méd.*, **1**, 398.
—— and Maréchal, R. (1933). *C. R. Soc. Biol.*, Paris, **113**, 76.
Destrée, P. (1937). Ibid., **124**, 853.
Flexner, J., Bruger, M., and Wright, I. S. (1938). *J. Pharmacol.*, **62**, 174.
Gernon, J. T., Ewert, E. G., and Herrold, R. D. (1935). *Med. Rec.*, **141**, 141.
Gougerot, H., and Albeaux-Fernet, M. (1936). *Bull. Soc. franç. Derm. Syph.*, **43**, 1536.
Guns, P. (1934). Reprint from *Mitt. Soc. belge Oto-rhino-laryng.*, February 11.
Hunt, R., and Taveau, R. de M. (1911). *Bull. U.S. hyg. Lab.*, No. 73.
Knight, G. C. (1934). *Brit. J. Surg.*, **22**, 155.
Kovaks, J. (1934). *Amer. J. med. Sci.*, **188**, 32.
—— Saylor, L. L., and Wright, I. S. (1936). *Amer. Heart J.*, **11**, 53.
Kramer, D. W. (1937). *Amer. J. med. Sci.*, **193**, 405.
Kreitmair, H. (1932). *Arch. exp. Path. Pharmak.*, **164**, 346.
Laube, A. (1935). *Münch. med. Wschr.*, **82**, 1687.
Loman, J., Rinkel, M., and Myerson, A. (1937). *Amer. J. digest. Dis. Nutrition*, **4**, 386.
Martin, L. (1937). *New Engl. J. Med.*, **217**, 202.
—— and Eaton, G. O. (1937). *Arch. physical Therap.*, **18**, 226.
Maxwell, J. S. (1937). *Lancet*, **1**, 263.
Miloro, A. (1935). Reprint from *Ann. Ottalm. Clin. Oculist.*, **63**, 780.
Moir, C. (1937). *Lancet*, **1**, 261.
Myerson, A., Loman, J., and Dameshek, W. (1937). *Amer. J. med. Sci.*, **193**, 198.
—— Rinkel, M., and Dameshek, W. (1936). *New Engl. J. Med.*, **215**, 1005.
—— Schube, P. G., and Ritvo, M. (1937). *Radiology*, **28**, 552.
—— and Thau, W. (1937). *Arch. Ophthal.*, Chicago, **18**, 78.
Nahum, L. H., and Hoff, H. E. (1935). *J. Amer. med. Ass.*, **105**, 254.
Nöll, H. (1932). *Arch. exp. Path. Pharmak.*, **167**, 158.
Officer, R., and Stewart, J. C. (1937). *Lancet*, **2**, 850.
Page, I. H. (1935). *Amer. J. med. Sci.*, **189**, 55.
Ritvo, M. (1936). *Amer. J. Roentgen.*, **36**, 868.
Rutenbeck, H. (1935). *Klin. Wschr.*, **14**, 228.
—— (1936). Ibid., **15**, 437.
Schnedorf, J. G., and Ivy, A. C. (1937). *Amer. J. digest. Dis. Nutrition*, **4**, 429.
Schulze, E. (1932). *Zbl. Gynäk.*, **56**, 2603.
—— (1935). *Münch. med. Wschr.*, **82**, 1358.
Simonart, A. (1932). *J. Pharmacol.*, **46**, 157.
—— and Simonart, E. (1934). *Rev. belge Sci. méd.*, **6**, 716.
Starr, I. (1935). *Trans. Ass. Amer. Phys.*, **50**, 289.
—— (1936a). *Amer. J. med. Sci.*, **191**, 210.
—— (1936b). *Trans. Ass. Amer. Phys.*, **51**, 326.
—— (1937). *Amer. J. med. Sci.*, **193**, 393.
—— Elsom, K. A., and Reisinger, J. A. (1933). Ibid., **186**, 313.
Van Dellen, T. R., Bruger, M., and Wright, I. S. (1937). *J. Pharmacol.*, **59**, 413.
Velhagen, K. (1933). *Klin. Mschr. Augenheilk.*, **90**, 512.
Velten, W. (1933). *Arch. exp. Path. Pharmak.*, **169**, 223.
Villaret, M., Justin-Besançon, L., Cachera, R., and Said (1932). *Ann. Med.*, **32**, 385.
—— —— Schiff-Wertheimer, and Gallois, J. (1932). *Arch. Ophtal.*, Paris, **49**, 129.
—— Vallery-Radot, P., Justin-Besançon, L., and Claude, F. (1934). *C. R. Soc. Biol.*, Paris, **116**, 1343.

V. Suntzeff, E. L. Burns, M. Moskop, and L. Loeb (*Amer. J. Cancer*, February, 1938, p. 256) have studied in mice the effects on the vaginal and uterine cervical epithelium of repeated injections of oestrogen with and without anterior pituitary and lutein hormones. With advancing age the average depth of the epithelial processes extending from the surface epithelium of the vagina and cervix into the underlying connective tissue increases, but in only one of 128 control mice did the proliferative change become carcinoma-like. In oestrogen-injected mice the increase in depth of the epithelial processes was greater and occurred at an earlier age than in the control mice, and in twenty-five of 234 injected mice the processes passed through a pre-cancerous to a carcinoma-like growth. Large doses of oestrogenic substance in oil were more effective than smaller ones or than aqueous solutions. It was not certain that ovariectomy or hereditary factors acted as they do in the case of the mammary gland, but there were indications that mechanical factors causing erosions might take part in the development of the carcinoma-like growths. The theoretical implications of the experimental results are discussed.

HEREDITARY BONE TUMOURS IN MICE

BY

F. C. PYBUS, M.S., F.R.C.S.

AND

E. W. MILLER, B.Sc., Ph.D.

(From the J. H. Burn Laboratory, Royal Victoria Infirmary, Newcastle-upon-Tyne)

(WITH SPECIAL PLATE)

It should no longer be disputed that a tendency to cancer is often inherited. While there is ever-accumulating evidence to show that this is so in man, of which probably every practitioner must have seen examples, most of the experimental proof has been obtained by animal breeding. The inheritance of mammary cancer in mice is being very fully investigated, chiefly by American workers. Certain strains which have been inbred for many generations are characterized by a definite and constant cancer incidence, high in some strains, intermediate or low in others. Once these characters are established such strains are used extensively for investigating the origin of mammary carcinoma. Other inbred strains have proved the inheritance of a leukaemic tendency, while in others there is a regular production of tumours of the liver or lung.

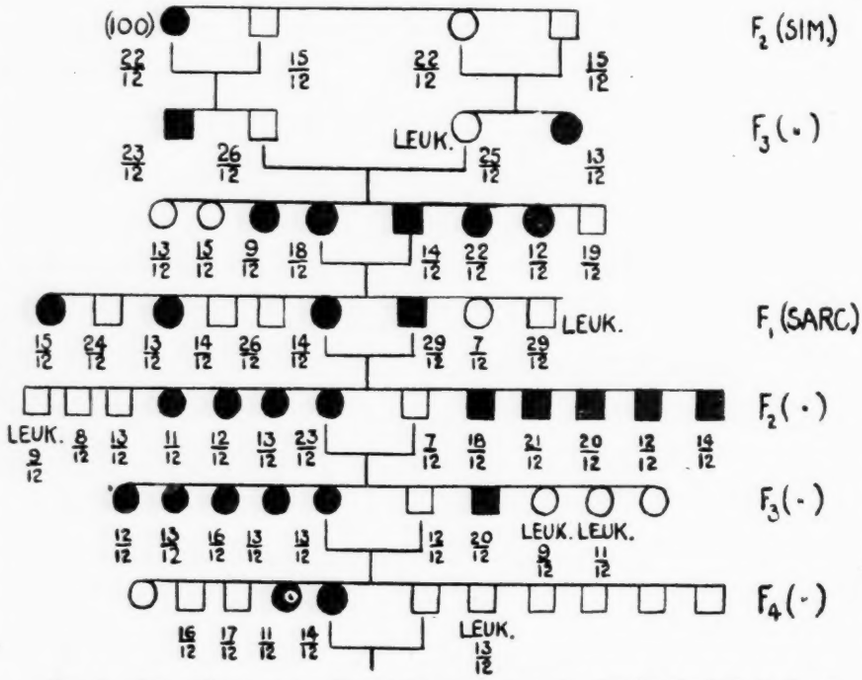


FIG. A.—The pedigree of one line of the sarcoma strain, showing the high incidence of sarcoma. The age of the mouse at death or appearance of the tumour is given in months. Where no age is given the mouse is still living.
○ = female; ● = sarcoma-bearing female; □ = male; ■ = sarcoma-bearing male; leuk. = leukaemia; Sim. = Simpson stock.

In 1929 a pair of mice from the Simpson strain (developed by Dr. Burton J. Simpson of Buffalo from the Lathrop-Loeb stock) was given to us by Dr. T. Lumsden. From this pair we have bred more than 5,000 descendants. The general incidence of mammary carcinoma is over 50 per cent. (in some inbred lines it is considerably higher). Lung tumours are very frequent, and other lines have a high incidence of leukaemia. Angiomata, epitheliomata, and other neoplasms are less numerous.

Sarcomata

Sarcomata were known to occur but rarely in the strain. The first six cases in our stock appeared in 1933, three of these being of bone and three subcutaneous. Mouse 100, the first to produce a bone tumour, had a sarcoma of the sternum in addition to a mammary carcinoma. The relations and descendants of these sarcoma mice were bred from; certain lines were inbred brother to sister, others were outcrossed in an attempt to increase the sarcoma incidence. During the next two years there were forty-two cases of bone tumours, mainly sarcomata, in this group. One of these, a female of 5½ months, had a hind limb amputated for a sarcoma of the tibia and was paired to a sarcoma-bearing male. The descendants from this mating, together with those from three other double-sarcoma pairings, formed the nucleus of our present inbred sarcoma strain, now in its seventh generation. The sarcoma incidence in one line is shown in Fig. A.

The sarcoma incidence in the ordinary Simpson stock is approximately 1 per cent. During the first four generations of inbreeding it increased to 10 per cent. In our inbred strain from the double-sarcoma pairings it is just over 50 per cent. At the time of writing there have been ninety-six cases of bone tumours in the inbred strain among 188 mice which have died over the age of 5½ months. There is a curious difference in incidence in the sexes, the females producing three times as many sarcomata as the males.

Sites Affected and Types of Tumour

We have now examined over 260 bone tumours, mainly sarcomata, from the descendants of the original pair of Simpson mice. In the majority of cases clinical recognition is easy. There is a thickening or tumour found in one of the long bones (Fig. B), while paraplegia is usually the first indication of a vertebral tumour. Large tumours about the pelvis may impede locomotion or parturition, while in others intracranial growths may be suspected. Diagnosis has been confirmed in some cases by

FIG. B.—Right femur and tibia from mouse 3754: osteogenic sarcoma of femur; slight changes in tibia.

x rays, which are a ready means of revealing multiple lesions or metastases (Plate, Fig. 1). An analysis of the sites shows that any bone may be affected (in one mouse the whole skeleton was altered), but the more common

sites are the femur, tibia, and spine, and occasional tumours of the jaw, skull, humerus, ribs, or sternum are met with.

The main types recognized are osteomata, composed either of compact or of cancellous bone, alone or in varying proportions, and in some cases associated with chondrification or rapidly growing soft tissue. The cancellous osteoma, local or diffuse, is the most common type.

Histology

Histological examination demonstrates all stages in the development of bone tumours. The earliest phase consists of proliferation of the osteoblasts, forming local hard or cancellous tumours (Plate, Fig. 2), single or widely distributed throughout the skeleton. This change may be confined to a small area, but more often it increases in extent until most of the bone is affected. At any time this proliferation may pass beyond the limits of the periosteum and invade the surrounding tissues. Again, at any point proliferation may show giant-celled tissue or may pass into a purely spindle-celled rapidly growing sarcoma (Plate, Fig. 3). Metastases are found in the lungs, liver, kidneys, and spleen. Like the parent tumour they show all grades of bone formation.

The essential feature of the tumours seems to be a varying degree of neoplasia of the osteoblast. In their varying degrees of differentiation and malignancy they show an exact analogy with the mammary tumours, which range from a single adenoma through all the stages to a generalized carcinoma of the whole mammary tissue.

Conclusion

With the possession of this inbred sarcoma strain, which reproduces many of the bone lesions known in human pathology, it may be possible to investigate the proximate cause of bone tumour formation and perhaps solve other problems concerning bone neoplasia.

Research into this subject and the investigation of rarer types of bone pathology are proceeding.

This work was carried out under a grant from the British Empire Cancer Campaign.

C. Coggi (*Ann. Ostet. Ginec.*, February 28, 1938, p. 107) discusses the aetiology, morbid anatomy, symptomatology, and treatment of necrobiosis of uterine fibromyomata during pregnancy. Six personal cases he describes include three cases of total aseptic necrosis, and one case each of partial aseptic necrosis, red degeneration, and septic necrosis. As a result of his investigations he comes to the following conclusions: (1) Aseptic necrosis in uterine fibromyomata during pregnancy is fairly infrequent, and is chiefly found in primiparae of a relatively advanced age: the immediate cause is ischaemia. (2) The symptoms consist chiefly of pain in the hypogastrium accompanied by tenderness on pressure over one particular spot and general disturbance which may range from slight pyrexia to cachexia and even acute peritonitis. (3) Expectant treatment is dangerous and unreliable and should only be adopted in special cases. (4) Myomectomy is the treatment of choice whenever possible: the fear of myomectomy being followed by abortion should not prevent the performance of this operation, since the patient will be in a better state to face another pregnancy. (5) The prognosis is always grave, and whatever be the treatment adopted necrobiosis is dangerous for the mother and in most cases fatal to the foetus.

A CASE OF ABDOMINAL PREGNANCY

BY

RONALD REID, M.S., F.R.C.S.

Assistant Surgeon, Essex County Hospital, Colchester

(WITH SPECIAL PLATE)

Although many cases of abdominal extra-uterine gestation have been reported in recent years the condition is one of interest and is uncommon enough to justify the presentation of yet another case. That recognition is difficult is evinced by the fact that in a comprehensive review of the literature Cornell and Lash (1933) found a correct pre-operative diagnosis to have been made in only 35 per cent. of the 236 cases collected. Before proceeding to report the case recently under my care it will be relevant briefly to review the present knowledge of this condition. For information I am greatly indebted to the exhaustive survey by Cornell and Lash quoted above.

Present Knowledge of the Condition

Abdominal pregnancy has been reported in women whose ages range from 15 to 64 years, the 64-year-old patient having carried her foetus forty years. Under 2 per cent. had previously suffered ectopic pregnancy, and the condition was seldom complicated by other diseases or tumours. The leading symptom was abdominal pain, and this was often associated with slight vaginal haemorrhage and attacks of fainting or vomiting. On abdominal palpation the ectopic foetus may be felt separate from a moderately enlarged uterus and lying higher than the normal foetus. The cervix, though soft, is less so than in a case of normal pregnancy, and it is often high up behind the symphysis pubis. Exploration of the uterine cavity with a sound, or hysterography after lipiodol injection, has been found of considerable diagnostic value.

Deformities are the rule in the baby; these are often due to pressure, only eight cases out of 236 having been reported as normal. The foetal mortality is high: in eighty-six cases in which the baby was born after six months the mortality was 22 per cent., whereas in sixty cases in which the baby was born alive in the eighth and ninth months the mortality was 35 per cent.

The maternal mortality was 14 per cent. in the 236 cases, shock, haemorrhage, and peritonitis accounting for the majority of deaths. It has been taught that in abdominal pregnancy operation may be profitably delayed until the foetus is dead and the placenta thrombosed and relatively avascular, but Cornell and Lash have shown that in the cases so treated the maternal mortality was 33 per cent., thus forcing one to the conclusion that such a teaching is erroneous. These authors also point out that operative treatment should include the removal of foetus, membranes, and placenta *in toto*, as the mortality of such a procedure—being 10 per cent.—compares very favourably with a mortality of 20 per cent. in cases treated by leaving the placenta, with or without marsupialization. However, it may be that the high mortality of the latter policy may be partially accounted for by its being adopted in the more advanced cases or with more seriously ill patients. Certain other writers, on the other hand, consider non-interference with the placenta to be the wisest course and report its complete absorption in a few months.

Upon the question of the optimum time to operate for the safety of the mother and child, the conclusion is that as the policy of delay has been shown to be fraught with

greater risk—since placental separation and rupture of the sac are ever-present dangers—operation is indicated as soon as the diagnosis is made. The delay necessary to obtain a living child is never justified in the face of the danger to the mother, the high foetal mortality, and the incidence of deformities.

Case History

The patient, a housewife aged 31, was admitted to the cottage hospital on October 28, 1937. She had two children, aged 2 and 5 years. She was small and plump, but looked pale and ill. Her last period was on August 12, and was quite normal. On October 13 the patient noticed a small vaginal "show," which cleared up in a few days, and she remained well until about six days before admission, when there was pain in the lower abdomen, nausea, and a slight rise in temperature. The pain cleared, but the abdomen was still uncomfortable, and in the early morning, two days before admission, the patient went downstairs and collapsed on the floor, where her husband found her. Her doctor states that the pulse was thin and rapid and the skin cold; he moved her to hospital, where she rapidly recovered. When examined two days after admission she was pale, and was in considerable pain. The pulse was 90 and the temperature 101°. The abdomen was tumid and resistant below the umbilicus, but not rigid. There was a profuse thick yellow vaginal discharge, with marked tenderness on rectal examination, but no mass was palpable. On vaginal examination the cervix was soft but the uterus could not be defined.

Two weeks later the patient was seen again, and her general condition was found to be much improved; the pulse was normal and the temperature varied up to 100.8°, but she still had occasional abdominal pain, notably after an enema had been given. On examination there was some resistance, but the uterus could be felt to be about the size of an orange, and in the pouch of Douglas was a soft ill-defined mass. A conservative policy was advised with regard to the mass, and local heat was applied as foments and douches.

On my next visit to the cottage hospital the patient had been discharged, but she was readmitted on January 15, 1938, because it had been noticed that the abdomen was increasing in size in a manner not associated with the swelling of normal pregnancy. The enlargement was mainly to the left of the mid-line. On examination there was no increase of pulse or temperature; the general condition of the patient was good, but the abdomen showed two separate swellings. The uterus, the size of a four-months pregnancy, was situated to the right side of the hypogastrium, while to the left was a much larger tumour, ovoid in shape, extending in a curved manner to a height above the umbilicus and to the left of it. The mass was soft, movable, of even consistency—not tender—and its lower pole, of identical fluctuant softness, could be felt in the pouch of Douglas. The biological test for pregnancy was positive.

Although it was noted that the uterus was small for the estimated duration of pregnancy, the diagnosis of abdominal pregnancy was not considered, and the case was labelled one of pregnancy complicated by an ovarian cyst, with the observation that perhaps the original pain had been due to partial rotation of a cyst which was at that time smaller and concealed by the resistant abdominal muscles. In view of the rapid increase in size of the tumour, operation at an early date was advised and the patient kept in hospital. A few days later an enema, given in the course of routine preparation for an operation, precipitated an attack of violent general abdominal pain. The facies was anxious, the respirations short, and the pulse rate raised. The abdomen, previously soft enough to allow of easy examination, became tense, rigid, and exquisitely tender.

Under gas-oxygen-ether anaesthesia the patient was submitted to laparotomy. By a right paramedian incision the peritoneum was opened to allow of the immediate outrush of dark fluid blood. This was cleared away, and on retracting the edges of the wound a large ovoid, smooth, dark blue, glistening tumour was seen lying in the left side from the pelvis upwards. Within could be seen foetal parts floating in an excess of apparently clear amniotic fluid. As blood welled freely up from the pelvis haste was made to deliver the whole foetus together with its sac, which was scarcely adherent to surrounding structures. The cord was cut, the intestines drawn to one side, and the placental site examined. The placenta was a large disk, well formed and covering the right broad ligament, the right side of the enlarged and soft uterus, and the lower pole of the caecum. Blood issued rapidly from beneath its detached edge, and so it was quickly peeled off and the haemorrhage controlled by firm pressure applied with hot packs for five minutes without ceasing. On then examining the site, the haemorrhage was seen to have diminished, and the ovarian vessels and an extended upper branch of the right uterine artery were ligatured. The roughened broad ligament was thereupon doubled over and sewn down, raw surface to raw surface. The haemorrhage was not difficult to control and the abdomen was closed. Half a litre of glucose saline was given intravenously by the drip method, and 1/3 grain of morphine was injected hypodermically. In four hours the patient had a pulse of 120, and from then onwards she made a steady recovery.

Description of the Foetus

The foetus (see Plate) weighed about sixteen ounces, and its total length from vertex to heels was about eleven inches. The skin was wrinkled, firm, and reddish in colour, and there was some sebaceous material about the groins. The legs were slightly longer than the arms. The back was bent forwards in a sharp dorsal kyphosis and the head was flattened from side to side, and was of a peculiar scaphoid shape as if it had been moulded round a prominence. The mouth, eyes, and ears were fairly well formed.

On delivery from the mother's abdomen the foetus was alive and moved quite vigorously, at the same time making many gasping attempts to breathe. After five minutes all trace of life had passed.

Commentary

It will have been noticed that this case conforms with those reported in that the mother was a previously normal woman who, on becoming pregnant, had a show of blood after a month and then severe abdominal pain; also that she carried her ectopic foetus unsuspected until eventually she was delivered of a premature and deformed child by abdominal section.

The possibility is that pregnancy started in a Fallopian tube, there was a warning haemorrhage a month later, and at the sixth week a tubal abortion occurred. The embryo must then have found new and satisfactory attachment or retained sufficient of its old connexions to survive and grow. The later attacks of pain must have been recurrent haemorrhages culminating in a loss causing symptoms and signs which demanded laparotomy. Despite the fearsome vascular bed promoted at the placental site by the action of the growing embryo, control of the haemorrhage after delivery of the foetus, sac, and placenta was not difficult, and was mainly effected by the pressure of hot packs for five minutes without relaxation.

BIBLIOGRAPHY

Cornell, E. L., and Lash, A. F. (1933). *Surg. Gynec. Obstet.* (Internat. Abstr. Surg.), **47**, 98.
Eisaman, J. R., and Ziegler, C. E. (1935). *J. Amer. med. Ass.*, **104**, 2175.
Friedman, S. L. (1937). *Amer. J. Obstet. Gynec.*, **33**, 683.
Woods, E. B. (1936). Ibid., **32**, 155.

KERATOPLASTY

WITH REPORT OF A CASE

BY

T. H. S. TIZZARD, M.B., Ch.B., D.O.M.S.

Honorary Surgeon, Eye Infirmary, Bath

(WITH SPECIAL PLATE)

During the last few years isolated accounts of successful corneal grafting by surgeons in this country, and particularly on the Continent, have appeared in ophthalmological and medical journals, and the various methods employed by ophthalmic surgeons have been fully reported. Elaborate methods of corneal grafting might well deter many oculists from attempting to perform the operation. In this paper it is intended to describe the simple technique I employed, with complete success, in a case towards the close of last year.

Much experimental work has been done during the past thirty years, with varying degrees of success. The degrees of success as described by various authors may be grouped under three headings: (1) clinically transparent; (2) slight degree of opacity in the graft or behind the graft, resulting from the formation of a fibrous tissue membrane; (3) much opacity, but less than originally. The visual acuity will depend not only upon the transparency of the transplant, but also upon the transparency of the lens and vitreous and the condition of the retina.

There are three methods of keratoplasty: (1) total; (2) partial superficial; (3) partial penetrating. In the two former methods the transplant becomes opaque in a period varying from three weeks to a few months. The last method offers the best permanent results. If the graft remains transparent for a period of one year the result is said to be permanent. I quote this from Elschnig's and Filatov's observations. The transplant must be taken from the same individual (autoplasty) or from individuals of the same species (homoplasty). Hetero-transplants invariably become opaque. The homogeneity of the donor's and the recipient's blood-grouping appears to be of no importance.

Case Record

Eighteen months previously the patient, a young woman aged 23, had a severe interstitial keratitis of both eyes, resulting in opacities of both corneae. The Wassermann reaction was strongly positive. She received vigorous treatment for the eye condition at the Bath Eye Infirmary for five months. Mercury and iodide were given, and she received three courses of arsenical treatment. A year after the beginning of treatment the eyes became white. In November, 1937, right vision was 4/60 and left vision was limited to hand movements. As vision in the left eye was the worse I decided to operate on this eye. A donor was found—a patient who was being treated for a perforating injury to the sclera which resulted in loss of vitreous and complete detachment of the retina. The wound was stitched, but the eye remained irritable, and so enucleation was indicated.

PRE-OPERATIVE PREPARATION

The blood group of the donor was "A" and that of the recipient "B." Cultures were taken from the conjunctival sacs of the donor and the recipient. No pathogenic micro-organisms were grown during forty-eight hours' incubation. For some weeks previously the sacs of the recipient had been irrigated with lotio hydrarg. oxycyanid. 1 in 10,000 three times a day. An aperient was given the evening before the operation, and a drop of eserine 1 per cent. aqueous solution was instilled into the left eye. On the day of the operation the left conjunctival sac was irrigated with normal saline, and the lashes were cut. The skin of the lids and the area in the vicinity were painted with a solution of brilliant green in spirit, and a drop of eserine was again instilled into the left eye.

OPERATION

The recipient's eye was anaesthetized with several drops of cocaine 4 per cent. Four or five drops of adrenaline 1 in 1,000 were instilled at intervals of a few minutes. A facial nerve block with 2 c.cm. of 2 per cent. novutox, injected at the site where the upper branch of the seventh cranial nerve crosses the neck of the condyle of the mandible, secures akinesia of the orbicularis oculi. A lid speculum was used during the entire operation. With a Hudson's knife the conjunctiva was incised round the limbus in its upper half from 3 to 9 o'clock, and undermined with scissors so that it could be drawn down over the entire cornea at the conclusion of the operation and sutured to the sclera below. Three sutures of No. 1 black silk were passed through the conjunctiva near the cut edge (see Fig. A). The site of the graft was delineated

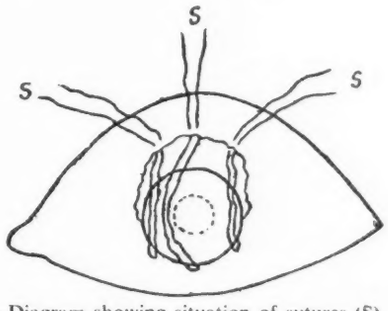


FIG. A.—Diagram showing situation of sutures (S), which are tied below after the graft is in position.

by placing No. 1 trephine (4.63 mm.) over the centre of the cornea and cutting through the epithelium. The trephine was removed, and a drop of sterile fluorescein was placed on the cornea. This outlined the graft. The trephine was again applied, and when a section had involved half the thickness of the cornea the trephine was slightly tilted to one side so that the cutting edge was directed obliquely through the deeper layers of the cornea. The anterior chamber was thus entered. The trephine was removed, and the section completed by dividing the remainder of the cornea with a pair of scissors whose cutting edges were bevelled.

The eye of the donor was enucleated, and immediately immersed in a watery solution of brilliant green 1 in 2,000 and then transferred into physiological saline at body temperature. The eye was held in the left hand, and the graft removed in the same way as from the recipient's eye, but using a 4.5 mm. trephine. By using a trephine a little less in diameter the piece of cornea could easily be fitted into the bed prepared. The graft was removed by sliding a repositor beneath it, and it was then placed in a watch-glass filled with sterile normal saline at about blood temperature. The bed of the graft having been prepared, the graft was lifted on to the upper surface of a spatula, transferred to the corneal bed, and fitted as accurately as possible, so that the surface of the graft was flush with that of the surrounding cornea. The corneal flap was drawn gently over the entire cornea and the sutures tied. Sterile atropine oil 1 per cent. was instilled and both eyes were firmly bandaged. Luminal 1 grain was given twice daily.

POST-OPERATIVE COURSE

On the second day the patient complained of severe pain in the operated eye. The bandages were removed and one drop of oily atropine was instilled into that eye. Both eyes were bandaged again. Hereafter the eye was dressed every day and atropine was instilled. On the fourth day the conjunctiva had receded from the cornea, exposing the graft, which was

transparent. Ten days after the operation the right eye was uncovered. The graft, acting as a foreign body, caused great irritation, and in consequence a white fibrous ring began to form round it. A number of small blood vessels could be seen growing superficially in the cornea from the limbus towards the transplant. As time went on these vessels encroached upon the margin of the transplant, but never at any time did they grow to the centre. By the third week from the date of the operation the eye became quiet and the bandages were removed. Six weeks after the operation, vision with correction was 6/36. This rapidly improved. Now, six months after operation, the graft is quite transparent, the pupil is freely active, and there are no anterior or posterior synechiae. The fundus can be clearly and distinctly seen with the ophthalmoscope, and the field of vision is fairly full. Vision with correction is 6/5 partly, and the patient can read the smallest print. She is now able to take an interest in life, and can follow her former occupation of a shop assistant. (The two figures in the Plate show the condition of the eye before and after operation.)

This is believed to be the best visual result so far reported in this or any other country, vision having been completely restored.

Comments

1. The operative procedure in this case is simple, and requires no elaborate instruments.

2. With a larger trephine than the one used, anterior synechia would be more likely to occur, resulting in opacification of the graft. With a smaller trephine than 4 mm. the fibrous tissue ring which forms at the junction of the cornea and transplant is apt to occlude the small central clear area of the graft.

3. By contracting the pupil with eserine before trephining the recipient's cornea there is less likelihood of injuring the lens when preparing the bed for the transplant.

4. To bring the conjunctiva over the cornea in the manner described is better than dissecting the conjunctiva from the whole limbus and drawing it over the cornea by a purse-string suture, as by this latter method the graft is more easily dislodged from its bed.

5. The graft should be very carefully trephined, as Descemet's membrane easily buckles and detaches at the cut edge.

6. Local anaesthesia is preferable to general anaesthesia as it eliminates post-operative unrest.

This case was shown at a meeting of the Bath Clinical Society last February.

My thanks are due to Dr. H. J. Heathcote for examining the blood for the Wassermann reaction and for the blood-grouping in the two cases.

BIBLIOGRAPHY

Castroviejo, R. (1934). *Amer. J. Ophthal.*, **17**, 932.
Elschnig, A. (1930). *Arch. Ophthal.*, Chicago, **4**, 165.
Filatov, V. P. (1935). Ibid., **13**, 321.
Thomas, J. W. T. (1933). *Proc. roy. Soc. Med.*, **26**, 597.
—— (1935). *Trans. Ophthal. Soc. U.K.*, **55**, 373.
—— (1937). *British Medical Journal*, **1**, 114.
Tizzard. T. H. S. (1937). *Lancet*, **1**, 1106.

According to official reports the year 1937 in Czechoslovakia was characterized by an almost general rise in infectious diseases. Typhoid fever was very frequent in the eastern provinces, diphtheria showed considerable recrudescence in Bohemia, there was a rise in malaria, and influenza caused almost twice as many deaths as in 1936. On the other hand, the decline in tuberculosis continued, and scarlet fever, measles, and whooping-cough claimed fewer victims.

SUPERIOR PULMONARY SULCUS TUMOUR

BY

J. L. RYCE, B.M., B.Ch.

Borough Hospital, Southampton

(WITH SPECIAL PLATE)

The condition described by Pancoast in America in 1924, and called by him a superior pulmonary sulcus tumour, gives a definite clinical syndrome and is rare enough to deserve mention. Comparatively few cases have been reported, and these mostly in America.

The patients are of the carcinoma age, usually male, and present themselves on account of pain in the region of the shoulder, shooting down the inner side of the arm and forearm. The pain is more or less constant, is very intractable, and persists during the course of the illness, which is usually less than a year. Loss of power and wasting in the muscles of the hand follows, and is associated with Horner's syndrome (paralysis of cervical sympathetic) of the same side (contracted pupil, enophthalmos, and lack of sweating with dryness of the face and neck). At the same time dullness at the apex of the lung may be made out, and as the disease progresses a hard indefinite mass may be palpated behind the clavicle. Repeated radiographs will show a small circumscribed shadow at the apex of the lung and gradual destruction of the posterior parts of the first and, later, the second and third ribs, together with the adjacent articular and transverse processes and sides of the bodies of one or more vertebrae. The apical shadow remains fairly circumscribed, with a lack of intrathoracic metastases. All the cases are typical, Horner's syndrome being an essential feature. The ulnar pain, the wasting of hand muscles, and the Horner's syndrome place the lesion in the region of the common trunks from the eighth cervical and first thoracic nerves as they issue from the intervertebral foramina.

Case Record

The present case was that of a man aged 50 years, a butcher, who had been attending the medical out-patient department of the Royal South Hants and Southampton Hospital for some years with tabes dorsalis. He was sent to us on July 8, 1937, with a tentative diagnosis of angina pectoris, as he had complained of pain in the left side of his chest and left arm for the past ten weeks. This was worse on exercise and better on raising the arm above the head. He had had a right hemiplegia twenty-five years ago in which he lost his speech, but this had recovered considerably.

On examination he was found to have considerable arteriosclerosis. His blood pressure was 160/90. There was no great enlargement of the heart, and no murmurs. The right pupil was larger than the left, and both were inactive to light and accommodation. No knee-jerks were demonstrable, but his right arm and leg showed weakness and loss of power, and he gave bilateral Babinski responses. Marked hyperaesthesia of the left chest and shoulder was present. The central nervous system was otherwise normal, as were the other systems. The Wassermann reaction was positive.

An electrocardiogram taken on July 18 was normal. On July 22 radiographs showed no evidence of aneurysm. At this date the left apex was found to be dull to percussion, but there was no cough or sputum. *X*-ray films taken on August 16 revealed no cervical rib, but there was definite caries of the tip of the first dorsal vertebra (? tuberculous or syphilitic), which appeared to be associated with gas-containing abscess. At this time a lump could be felt behind the inner third of the left clavicle, and he complained of pain and numbness

on the inner side of the left arm, with weakness of the hand-grip and fingers.

On September 5 definite wasting of the left palmar muscles and loss of hand-grip were observed. He now received injections of N.A.B., bismuth, and sodium iodide. He was seen by Mr. Nightingale and Dr. Fisher, who thought this to be definitely a case of new growth at the left apex (? origin, but probably bronchial). On the 12th there was oedema and swelling of the left arm (? due to lymphatic or venous obstruction), and left Horner's syndrome. Another radiograph taken on the 15th showed that the condition was worse: there was more erosion of the seventh cervical vertebra; the first rib had disappeared, and the second partly disappeared at the head and neck (Plate, Fig. 1). From this time the patient went rapidly downhill, his temperature became elevated, and he died on September 28.

Post-mortem Examination.—A large mass was found at the left apex involving the lung, upper three ribs, and the vertebrae, and surrounding the left subclavian vein, which was thrombosed. No primary was present elsewhere, but there was terminal pericarditis and pyaemic abscess of the kidney. The growth had the consistency of an unripe pear, and had completely replaced the upper two ribs, which could be cut easily with the knife. Sections of lung, ribs, and cervical glands were made.

Report of Sections.—All sections showed squamous-celled carcinoma with cell-nest formation (Plate, Fig. 2). Catarrhal pneumonia was present in the lung.

Commentary

This case corresponds exactly to the description given by Pancoast, and is actually more complete owing to our being able to obtain a full necropsy. None of the original cases apparently were examined post mortem. The result of microscopy does not settle the vexed question of the origin of the tumour, which Pancoast suggested was in the remnants of the fifth branchial cleft. A tumour in this situation gives none of the common symptoms of carcinoma of the lung, such as cough, sputum, or haemoptysis: its symptoms and signs are due entirely to pressure and mechanical involvement of the structures in its neighbourhood; consequently the picture may be given by any tumour which encroaches upon this particular situation. Cases described by Evans, Tobias, Steiner and Francis, Jacox, and others all exhibited the typical *x*-ray appearances and clinical features, but were shown to be due to various tumours, such as thymomas, sympathoblastomas, secondary growths from stomach and cervix uteri, and breast and bronchial carcinoma. The last-mentioned forms the largest proportion of the cases, and probably is the usual cause of the syndrome. Browder and de Veer, in describing another case, suggested that the name of carcinoma of the pulmonary apex is more appropriate than that applied by Pancoast. Our case may therefore have been a squamous-cell type of carcinoma at the apex, originating most probably in the lung but possibly in a branchial remnant.

The differential diagnosis includes several widely differing conditions. Cervical rib and syringomyelia may be excluded by the *x*-ray appearances. Tuberculous fibrosis at the apex does not cause destruction of the ribs or vertebrae. Endothelioma of the pleura spreads more rapidly, and again there is no bone change. Osteogenic sarcoma of the ribs or spine in this region may confuse, but there is generally widespread metastasis to other organs, the superior sulcus tumour being circumscribed and only spreading locally.

All the patients have been unrelieved of their symptoms by any procedure, surgical or otherwise, and a feature of the condition is its rapidly progressive and fatal course. The growth seems to be completely resistant to irradiation treatment, which was given in the majority of cases reported. Jacox suggests the frequent metastasis of bronchial carcinoma to the suprarenals as a cause of the rapid decline. Such metastasis, however, has not been demonstrated in any case.

I am indebted to Dr. M. K. Jardine for assistance with the case history, and to Mr. H. J. Nightingale and Dr. D. Fisher for permission to report the case.

BIBLIOGRAPHY

Browder, J., and de Veer, J. A. (1935). *Amer. J. Cancer*, **24**, 507.
Fried, B. M. (1934). Ibid., **20**, 791.
Frost, T. T., and Wolpaw, S. E. (1936). Ibid., **26**, 483.
Jacox, H. W. (1934). *J. Amer. med. Ass.*, **103**, 84.
Kelman, H., and Schlezinger, N. S. (1937). *Arch. Pathol.*, **23**, 383.
Pancoast, H. K. (1932). *J. Amer. med. Ass.*, **99**, 1391.

FAILED SPLENECTOMY IN ACHOLURIC JAUNDICE, AND THE RELATION OF TOXAEMIA TO THE HAEMOLYTIC CRISES

BY

W. N. WEST-WATSON, M.D.,

AND

C. J. YOUNG, M.B., Ch.B.

(From the Bradford Royal Infirmary)

The accepted treatment for acholuric jaundice is splenectomy, and in the majority of cases there is little doubt that the results are good. Cowen (1936) mentions "the generally accepted view that the operation brings about complete and lasting freedom from symptoms." Dawson (1931) states: "Even in the severe anaemias the recovery is rapid and permanent, and the patients are thenceforth healthy." Pemberton (1931), however, summarizes the results in 118 cases operated upon between 1911 and 1931 in the Mayo Clinic. The hospital mortality was four, subsequent deaths numbered eleven (six stated to be due to unrelated causes), eighty-two patients were alive and well, and fair and poor results were obtained in sixteen cases. Difficulties exist in the interpretation of these figures, but some degree of failure apparently resulted in at least 20 per cent., the true figure being probably higher. While the author believes that splenectomy should be advised as the safest form of treatment in all cases, these figures suggest that the results may not be so good as some writers would indicate.

Examination of the literature shows that failure, of varying degree, has been due to operative mortality, complications such as hepatic disease and other types of anaemia, and inability to achieve temporary or permanent relief from excessive haemolysis. Relief from the latter is the direct object of the operation, and in this paper consideration is directed chiefly to this question. We have failed to find any published data of its frequency.

It has been recommended that to prevent possible future haemolytic crises splenectomy should be carried out even in slight cases, especially if the family history is bad (Cowen, 1936). Probably this is effective in many cases, but it is clear from the literature (Freund, 1932) that the operation does not guarantee freedom from such crises.

There appears to be some factor which converts latent into acute acholuric jaundice, and as many of these patients are quite well between haemolytic attacks, some information as to the cause of these latter is desirable. Consideration of some of the failed splenectomies, including one of our own, and various other cases, suggests that toxaemia may be one of the factors stimulating haemolysis.

Failed Splenectomies

Freund (1932) quotes six cases from the literature, and records two others, in which operation failed to relieve the haemolysis permanently. Freund's first was a case of congenital acholuric jaundice in a boy aged 10 in whom haemolysis continued without remission after splenectomy, with pyrexia and abscesses, but necropsy gave no clue as to why the case differed from others in which splenectomy was successful. The second case was that of a girl of 11, with chronic bronchiectasis and hyperthyroidism, both of which preceded any history of jaundice. Considerable improvement followed splenectomy, but nine months later she developed a sore throat with pyrexia, and jaundice followed a few days later, death ensuing rapidly. Post-mortem examination showed bronchopneumonia with pus in the dilated bronchi. The author questions the advisability of splenectomy in this case, owing to a possible depression of the defence mechanism against infection. She also suggests that further studies should be made to ascertain whether or not chronic infection occurring in a case of haemolytic jaundice should be considered a contraindication to splenectomy. Both these cases showed increased red-cell fragility.

A. C. and A. Van Ravenswaay (1934) recorded a case of haemolytic jaundice with normal red-cell fragility associated with an infection of the paranasal sinuses and the left ear and mastoid. Multiple transfusions failed to cure, and splenectomy was followed by only temporary improvement, but remission eventually occurred. Further attacks of sinusitis were associated with jaundice and anaemia, and in each instance improvement in the sinus condition was accompanied by an improvement in the anaemia.

Lovibond (1935) records a case in which, eight days after splenectomy, the patient died from a streptococcal infection. There was a history of a mastoid operation five years previously, following which she had been treated for anaemia. Liver, iron, blood transfusion, and splenectomy all failed to improve her condition. Increased fragility was found in one out of six tests. "The probable cause of the anaemia was thought to be either acholuric jaundice or an infective process."

Relationship of Toxaemia to the Haemolysis

The question of the presence or absence of infection or toxaemia and its possible relation to the haemolysis is one of special difficulty.

Some authors accept the presence of pyrexia and leucocyte changes as evidence of infection, but the products of the rapid blood destruction might be sufficient to account for these phenomena (Joules and Masterman, 1935). Also, it is a common experience that cases of severe anaemia tend to be febrile, whatever may be the actual mechanism involved (Lovibond, 1935). While these points constitute no evidence against the toxaemic theory, they render pyrexia and leucocytic changes inadequate for establishing its causal relationship. Some clinical evidence of an association between infection and haemolysis is available in two of the cases quoted above, parallel fluctuations of each in one case being particularly suggestive. Further examples of this relationship are provided by the following cases.

Dedichen (1937) records an epidemic of haemolytic crises in two families, eighteen members of which were found to have familial haemolytic jaundice. The author suggests that the acute manifestations were precipitated by what was presumably influenza. Scott (1935) records an epidemic of crises occurring at short intervals in four members of one family (increased fragility in all), suggesting an infection, although Scott does not favour this view. Infection, nevertheless, does not appear to be excluded, and the epidemic nature of the attacks is suggestive, and is not otherwise explained. It is doubtful, however, if the crises were entirely haemolytic in character. Estiu and Lenci (1931) record a case which developed a haemolytic crisis with palpable spleen following the onset of a tonsillar infection. After tonsillectomy the red-cell count rose almost to normal and the spleen became impalpable. Splenectomy was not performed.

Lederer's acute haemolytic anaemia bears a close resemblance to the crises of acquired acholuric jaundice, and Lederer (1925, 1930) in recording six cases of acute haemolytic anaemia suggested that they were due to infection, basing this opinion on the sudden onset and the presence of fever and leucocytosis. In discussing this condition O'Donoghue and Witts (1932) emphasize the slenderness of the evidence on which anaemia is attributed to foci of infection. They conclude that this acute haemolytic anaemia appears to be a specific illness due to infection, but the nature of the infection is unknown. In selecting thirty-six cases from the literature for consideration, however, they have rejected all with proved infection.

In the absence of experimental evidence the examples quoted do no more than suggest that toxaemia may be a possible factor in the haemolytic crises of acholuric jaundice. This possibility receives some support from the following case, in which splenectomy was performed during a haemolytic crisis without success, but after removal of an ovarian teratoma recovery ensued.

Case of Failed Splenectomy

The patient was a married woman of 44, and was admitted to hospital with a two-months history of shortness of breath on exertion, increasing pallor, and some loss of weight and appetite. She had had no menstrual period for five months. There was no history of previous jaundice and no family history. She was febrile, and there was a lemon tinge in the skin. Apart from a tumour in the lower abdomen, thought to be a fibroid, and a precordial murmur no other physical signs were detected. The haematological findings are shown in the table.

Microscopical examination of the blood showed the presence of the densely staining microcytes usual in acholuric jaundice, along with large numbers of reticulocytes and nucleated red cells. Free HCl was found in a test meal. A diagnosis of a haemolytic crisis in acholuric jaundice probably of the so-called acquired type was made.

COURSE OF THE ILLNESS

A transfusion was given but failed to affect the haemolysis, as did a further transfusion three weeks later. Parenteral liver treatment was tried without effect. Splenectomy was therefore carried out, a small spleniculus being also removed. Gall-stones were noted to be present. The patient's blood was now found to agglutinate the red cells of two donors of her own group (O), but a compatible donor was found and a further transfusion given after the operation.

Although the spleen had been impalpable it was seen to be enlarged on removal, the weight being 500 grammes. The cut surface was a uniform dark red colour, the Malpighian bodies being invisible. Microscopical examination showed the usual feature of acholuric jaundice—namely, well-marked engorgement of the pulp with red cells; the Malpighian bodies were small, and no pigment deposits or Gandy-Gamna nodules were seen.

Table showing the Blood Picture in a Case of Failed Splenectomy

Date	Haemoglobin per cent.	Red cells per c.mm.	Colour Index	Reticulocytes per c.mm.	Nucleated Reds per c.mm.	Fragility per cent.	Van den Bergh		Leucocytes per c.mm.	Polymorphs per c.mm.	Lymphocytes per c.mm.	Lobes per 100 Polys.	Platelets per c.mm.
							Direct*	Indirect					
17/1/36	23	812,000	1.42	Numerous	—	—	—	—	—	—	—	—	—
25/1/36	17	580,000	1.47	—	36,746	—	Neg.	Pos.	13,353	8,654	3,313	197	—
26/1/36	Transfused 720 c.cm.												
31/1/36	30	—	—	—	—	—	—	—	—	—	—	—	—
5/2/36	27	1,250,000	1.08	—	—	0.6—0.44	Neg.	Pos.	—	—	—	—	—
7/2/36	26	1,012,000	1.23	455,000	—	—	—	—	—	—	—	—	162,000
15/2/36	Transfused 600 c.cm.												
19/2/36	23	—	—	—	—	—	—	—	—	—	—	—	—
21/2/36	18	850,000	1.06	—	—	—	—	—	—	—	—	—	—
21/2/36	Splenectomy. Transfused 720 c.cm.												
25/2/36	29	1,300,000	1.12	—	—	—	Pos.	Pos.	—	—	—	—	—
28/2/36	31	1,375,000	1.13	550,000	80,376	—	—	—	21,624	17,340	3,264	194	80,000
2/3/36	38	1,830,000	1.04	604,000	—	—	—	—	—	—	—	—	100,000
6/3/36	37	1,887,000	1.00	774,000	—	—	Neg.	Pos.	—	—	—	—	280,000
11/3/36	45	2,150,000	1.05	473,000	700	—	—	—	7,900	4,977	2,054	224	251,000
25/3/36	29	1,253,000	1.12	—	17,472	—	Neg.	Pos.	18,928	—	—	—	—
15/4/36	30	1,170,000	1.28	468,000	15,038	—	,,	,,	27,600	20,110	5,796	222	140,000
29/4/36	26	—	—	—	—	0.6—0.44	—	—	—	—	—	—	—
25/5/36	27	—	—	—	—	—	—	—	—	—	—	—	—
3/6/36	Right ovariectomy and cholecystectomy												
22/6/36	62	3,050,000	1.02	290,000	59	—	—	—	5,900	3,038	1,888	226	533,000
29/6/36	—	—	—	—	—	0.62—0.4	Neg.	Neg.	—	—	—	—	—
10/8/36	76	—	—	—	—	—	—	—	—	—	—	—	—
12/10/36	88	4,680,000	0.94	61,000	0	—	—	—	8,000	5,600	1,920	265	340,000
14/12/36	89	4,310,000	1.03	—	0	—	—	—	7,300	4,351	2,219	276	—
15/2/37	82	4,000,000	1.02	—	—	—	—	—	7,200	—	—	—	356,000
31/5/37	96	—	—	—	—	—	—	—	—	—	—	—	—
18/10/37	90	4,175,000	1.08	—	0	0.4—0.3	Neg.	Neg.	7,500	5,025	1,875	277	—
21/3/38	89	4,240,000	1.05	70,000	0	0.45—0.3	,,	,,	7,300	4,818	1,861	268	389,000

* The direct Van den Bergh test refers only to the immediate reaction.

Following the splenectomy the patient was worse, the jaundice becoming deeper and of the obstructive type for a short period, with some swelling of the left leg and pleural rub and pain in the chest. Pyrexia persisted and there was no cessation of haemolysis, but there was an increase in the reticulocytosis. The haemoglobin rose to 45 per cent., but soon fell back below 30 per cent.

Eventually after four months in hospital, during which splenectomy, three transfusions, and liver therapy had failed to arrest the haemolysis, it was decided as a last resort to explore again in search of a spleniculus. This was done, but none was found: the gall-bladder and the pelvic tumour, which proved to be an ovarian teratoma, were removed. No transfusion was given. Unexpectedly the haemolysis ceased immediately, the signs of toxaemia disappeared, the temperature settled, and the blood began to return to normal, complete recovery ensuing.

ULTIMATE BLOOD CHANGES

Twenty-six days after the last operation, the excessive haemolysis having ceased, the increased fragility was still present. It was not tested again for sixteen months, when it was found to have become normal. The use of a quantitative technique and washing the red cells revealed no defect. Price-Jones curves were constructed from blood films taken before the splenectomy and transfusions (25/1/36) and after the establishment of normal fragility (18/10/37), and are shown in the accompanying chart. The mean corpuscular diameter was originally normal, but the variability was very high.

After recovery the mean diameter was found to be above the normal range (8.136 μ), but the variability was normal and

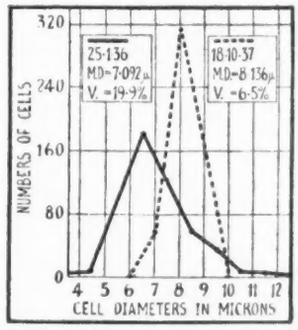


Chart showing the Price-Jones curves before splenectomy and transfusions and after the establishment of normal fragility.

no large megalocytes were found. The mean corpuscular volume (98 c.μ on 18/10/37) was also slightly increased, with a normal mean thickness (1.9 μ, calculated). Apart from these changes and an increased platelet count the blood picture has become normal.

THE OVARIAN TERATOMA

The ovarian teratoma consisted of a dermoid cyst containing some pellets and flakes of sebaceous matter and hairs. The following tissues were present in the wall: squamous epithelium, sebaceous and salivary glands, hairs, intestinal wall including mucosa, lymph follicles, muscular tissue, nerves, and nerve ganglia. No splenic tissue was found. Degenerative changes with an inflammatory exudate and polymorph infiltration and plasma-cell foci were present in places. A bacteriological examination was not made, as its possible significance was not apparent at the time.

The gall-bladder contained numbers of dark-coloured faceted calculi. Except for pigmentation of the epithelium the wall showed no changes, but the cystic lymph gland contained considerable deposits of brown pigment, conspicuous to the naked eye. Microscopically these were found to be associated with proliferated endothelial cells lining the sinuses; the pigment gave a negative reaction for iron, and was presumably of biliary origin.

Discussion

In attempting to explain the train of events in this case the usual limitations of uncontrolled clinical material of this type restrict the drawing of conclusions, but the most probable explanation, so far as it goes, is that some substance was being absorbed from the ovarian teratoma and was, directly or indirectly, one of the causes of the haemolysis. Its mode of action can only be a matter of speculation, and we are unable to define the relation of the excessive fragility to the condition. It was present throughout the haemolytic period, persisted afterwards when excessive haemolysis had ceased, but eventually disappeared, and the mean corpuscular diameter, which had been normal, became abnormally high. The findings suggest a change from spherocytosis to a flatter cell of normal thickness and increased diameter, but it is of interest that Hawksley (1936), as the result of a study of the red cells, suggested that familial acholuric jaundice could not at present be regarded as a primary defect either of erythropoiesis or of splenic function; and Vaughan (1937) concluded that increased spherocytosis is not the fundamental abnormality present in the red cell.

There are certain other possibilities which appear less probable. The removal of the gall-bladder at the second operation might be related to the successful result. No significant changes were found in the gall-bladder wall, and although calculi were present they are also present in a large proportion of cases of acholuric jaundice, and whether they are left or removed at operation does not appear to influence the result so far as haemolysis is concerned.

With regard to alternative diagnoses the condition most closely resembling this case is Lederer's haemolytic anaemia. The following are against this diagnosis: (1) the failure to respond to transfusions; (2) the excessive fragility and other red-cell changes; (3) the prolonged period of haemolysis (four to six months); (4) the histopathology of the spleen, which was that of acholuric jaundice. While these may appear to be good reasons for differentiation, we discuss this question further below.

The absence of a previous history and a family history (two daughters were available for fragility tests and both were found to be normal) is usually accepted as evidence that the case is of the acquired type of excessive red-cell fragility, although the existence of the acquired type is still questioned (Vaughan, 1936). There is some evidence that the two types exist, but we have no definite conclusion to offer on this question. As excessive fragility persisted for some time after cessation of the haemolysis an additional factor or factors (besides the spleen) must have been present during the crisis.

Classification of the Haemolytic Anaemias

The classification of the haemolytic anaemias is still unsettled, chiefly owing to lack of knowledge of their aetiology. It is not even clear whether cases showing increased fragility should be classified with those in which fragility is normal. Of Lederer's six cases (1925, 1930) the fragility is mentioned in three, and in these it was normal. Other writers have disregarded this point, and many cases showing increased fragility have been classified as Lederer's haemolytic anaemia.

Lederer did not discuss the differentiation of his cases from the crises of acquired acholuric jaundice. O'Donoghue and Witts (1932), in dealing with differential diagnosis, differentiate Lederer's anaemia from acholuric jaundice by the absence of family history and the brief duration, and from chronic acquired haemolytic anaemia by the acute febrile course with leucocytosis and signs suggestive of infection, but they provide no means of distinguishing it from haemolytic crises in acquired acholuric jaundice.

We have mentioned above four reasons for differentiating our case from Lederer's haemolytic anaemia, but as the latter condition has not yet been adequately defined we are unable to estimate to what extent these differential criteria are valid. We make the following comments regarding them.

1. Failure to respond to transfusion.—Some cases described as Lederer's have failed to respond to transfusion, and some cases of acholuric jaundice (Scott, 1935) have apparently responded well. One of us has seen an acute haemolytic crisis apparently respond satisfactorily to a transfusion, but when recurrence took place, over a year later, transfusion failed. Response is apparently variable in either condition and even in the same individual.

2. Excessive fragility.—This has already been discussed. Other red-cell changes have not yet been adequately defined in Lederer's.

3. Duration.—According to O'Donoghue and Witts, Lederer's disease is of a self-limited character, tending to death or complete recovery within a period usually of a few months. The value of this criterion is nebulous.

4. Histopathology of the spleen.—This is not yet established in Lederer's anaemia, as in none of his six cases was the spleen available for examination.

It is apparent that the differentiation of the two conditions is by no means clear, if indeed Lederer's anaemia is a distinct entity. In the absence of any record of increased red-cell fragility in Lederer's original cases, haemolytic crises showing this feature appear to us to be best classified in the acholuric jaundice group until more is known of the aetiology. It is perhaps of some interest that Harvey and Janeway (1937), in describing three cases of haemolytic crises apparently due to sulphanilamide, comment on their striking similarity to Lederer's anaemia.

Treatment

The first treatment usually adopted in haemolytic crises appears to be transfusion, in spite of its special risks. When this fails splenectomy has to be considered. Some of the cases quoted and the new one recorded indicate that an alternative sometimes exists, and our case shows that this alternative may be effective where the other two methods fail. It would seem reasonable to suspect the presence of an infection or other toxaemia in any case of acholuric jaundice showing a haemolytic crisis; but that

there are other factors in the production of the latter is apparent from its rarity compared with the frequency of toxaemias.

Failed splenectomies have been recorded not only in the apparently acquired type of acholuric jaundice but also in the hereditary congenital type (Freund, 1932), and there seem to be no data available to show whether failure is commoner in one type or the other. It is doubtful at present, therefore, whether splenectomy should be regarded with greater favour in the familial congenital type.

Summary and Conclusions

A case of acholuric jaundice with a haemolytic crisis is recorded, in which splenectomy failed to cure the haemolysis.

Recovery followed the subsequent removal of an ovarian teratoma.

From a consideration of this case and others from the literature it is apparent that splenectomy does not always cure or prevent haemolytic crises in acholuric jaundice, and where radical treatment is necessary splenectomy is not invariably the method of choice.

Evidence suggesting that toxaemia may act as one of the precipitating factors in producing a haemolytic crisis, and that the latter may be cured by removal of the toxaemia, is discussed.

We are indebted to Mr. P. McEwan in regard to the surgical procedures mentioned.

REFERENCES

Cowen, S. O. (1936). *British Medical Journal*, **1**, 690.
Dawson of Penn, Lord (1931). Ibid., **1**, 963.
Dedichen, H. G. (1937). *Norsk. Mag. Laegevidensk.*, **98**, 279; reviewed in *British Medical Journal*, 1937, **1**, Epitome, p. 73.
Estiu, M., and Lenci, P. (1931). *Rev. Ass. med. Argent.*, **44**, 347.
Freund, M. (1932). *Amer. J. Dis. Child.*, **43**, 647.
Harvey, A. M., and Janeway, C. A. (1937). *J. Amer. med. Ass.*, **109**, 12.
Hawksley, J. C. (1936). *J. Path. Bact.*, **43**, 565.
Joules, H., and Masterman, L. M. (1935). *British Medical Journal*, **2**, 150.
Lederer, M. (1925). *Amer. J. med. Sci.*, **170**, 500.
—— (1930). Ibid., **179**, 228.
Lovibond, J. L. (1935). *Lancet*, **2**, 1395.
O'Donoghue, R. J. L., and Witts, L. J. (1932). *Guy's Hosp. Rep.*, **82**, 440.
Pemberton, J. de J. (1931). *Ann. Surg.*, **94**, 755.
Ravenswaay, A. C. Van and A. Van (1934). *J. Missouri med. Ass.*, **31**, 198.
Scott, A. M. (1935). *Lancet*, **2**, 872.
Vaughan, J. M. (1936). *The Anaemias*, London, p. 230.
—— (1937). *J. Path. Bact.*, **45**, 561.

F. Hamburger (*Dtsch. Tuber.-bl.*, March, 1938, p. 53) points out that almost every tuberculous patient has tuberculous bronchial glands; there is, however, a narrower and more definite clinical entity occurring chiefly in infants under 2 years old. The general symptoms include a subfebrile daily temperature with a slight rise at night, lassitude, night sweats, and anorexia. Local symptoms are due to compression of the bronchi or trachea, and give rise to a high-pitched metallic cough and expiratory stridor. Similar symptoms may be due to mediastinal tumours or to acute bronchitis, and these conditions must be ruled out. Physical examination is of little value in the diagnosis of tuberculous bronchial glands. The tuberculin test must always be carried out; a negative result is proof of the absence of tuberculosis. An increased shadow round the hilum may be due to causes other than enlarged bronchial glands; its presence in a radiograph must be interpreted together with the other clinical data. A high blood sedimentation rate of 30 to 40 millimetres or more after an hour is in favour of active tuberculosis; a lowering of the rate is of good prognostic significance.

Clinical Memoranda

Fragment of Needle in Foot

(WITH SPECIAL PLATE)

The following case history presents some points that may be of interest.

CASE RECORD

A man consulted me on March 15, 1937, complaining that for the past two years he had suffered recurrent attacks of pain in the right ankle-joint. Latterly this symptom had increased in severity, and on exertion the right foot became swollen.

Clinically the condition appeared to be due to chronic synovitis of the ankle-joint. *X*-ray examination revealed a fragment of a needle lying in the soft tissues below the head of the os calcis (Plate, Fig. 1). Under local anaesthesia a Southey's tube was inserted into the sole of the foot down to the location of the foreign body, using the fluorescent screen. The trocar was removed, leaving the cannula in position. A further *x*-ray photograph (Fig. 2) was then taken by Dr. McDougall, who reports as follows:

"A piece of the eye end of a needle about half an inch long is visible close to the bone in the plantar aspect of the head of the os calcis. In the dorsi-plantar view the foreign body is right in the centre of the foot and about a quarter of an inch from the joint formed by the os calcis and the cuboid. A needle indicator is in position showing the relation of this guide to the foreign body."

Under local anaesthesia a vertical incision about three inches in length was made in the sole of the foot. Using the cannula as a guide, the dissection was carried through the plantar aponeurosis and deeper structures down to the head of the os calcis. The fragment of needle was found under the periosteum. The distal end of the cannula was situated about a quarter of an inch from the foreign body.

Points of interest are: (*a*) the use made of the cannula as a guide; (*b*) the patient had no history of a needle having entered his foot or any other part of his body.

Auckland, New Zealand. J. P. HASTINGS, M.D.

Ischio-pubic Osteochondritis: with Report of a Case

(WITH SPECIAL PLATE)

This uncommon condition has only recently been recognized clinically. Attention was first drawn to it by Van Neck in 1924. Since then a few cases have been described in America and on the Continent, but none has been reported in the British Isles. Probably it does occur with some rarity and only needs a wider recognition of its clinical and radiographic features.

The condition arises before the union between the ischium and pubis is complete. This occurs between 8 and 10 years of age. The case described below was that of a boy 8 years old when first seen. He had been complaining of pains in his lower limbs for four years. In Durham's series the average age of the five patients was 7½ years. Either sex may be affected. The condition may be bilateral or may only affect one side. It is a non-suppurative osteochondritis allied to the disturbances in growing areas met with in Perthes's and Osgood-Schlatter's disease. Durham thought that trauma might be a causative factor in some of his cases. There was no definite severe injury in the present case, but the boy was apt to trip and fall easily, and this may have been a factor.

The child is usually brought to the doctor on account of a limp and of pains in his lower limbs, referred about the hip-joint. The severity varies; in some children the disability is slight, but in others the child may be acutely ill. Two of Durham's patients held the hip flexed and had a temperature of over 102°. On rest in bed the acute symptoms rapidly subside. In bilateral cases all the symptoms may be referred to one side. Examination usually shows some spasm in the adductor muscles, causing a limitation of abduction, extension, and rotation of the hip-joint. Some thickening is to be felt over the ischio-pubic junction, and in the acute stage tenderness is present over the swelling.

Treatment consists in rest in bed till all spasm has disappeared. This will take less than six weeks, although the radiographs will still show the rarefaction and swelling at the ischio-pubic junction. Gradually the bony condition returns to normal.

CASE RECORD

In the present case the mother stated that for four years the patient, a boy aged 8, was easily tired. After walking about a hundred yards he would complain of pains in the calves; he also tripped and fell without apparent cause. The symptoms were not always present, but varied from day to day.

The boy was pale, of average height and weight, and had large and unhealthy tonsils. Nothing abnormal was noted on inspection. Movements at the hip-joints were full, with the possible exception of a slight diminution of internal rotation in the left hip. Palpation of the ischio-pubic rami revealed a slight thickening in the descending ramus. This swelling was not tender. The reflexes and sensation were normal. An *x*-ray examination showed swelling and rarefaction at the ischio-pubic junction, typical of osteochondritis. The condition was present on both sides, but was more marked on the right side (see Plate).

It was thought that the septic tonsils might have been a factor in the boy's pains and condition. The tonsils were accordingly removed by dissection. When seen six weeks later the patient was much improved in every way, but he was not yet allowed to exert himself. A radiograph taken at this time showed a lessening of the rarefaction, but the bone was not yet normal.

GEORGE D. F. MCFADDEN, M.Ch., F.R.C.S.,
Belfast. Ulster Hospital.

Clubbing of Fingers and Toes associated with a Congenital Lung Cyst

(WITH SPECIAL PLATE)

The following case appears to be interesting enough to be placed on record.

CASE RECORD

A commercial traveller aged 50 was referred to the out-patient department for investigation on account of glycosuria. He gave no history suggestive of diabetes mellitus, and the urine did not contain sugar, acetone, or diacetic acid. Blood sugar was found to be 0.085 per cent. two hours after a meal containing carbohydrates. On closer interrogation the patient stated that he had been taking large doses of aspirin for headaches. There was no history of previous illness; but since 1917, when he was gassed in France, he had developed some cough with a little sputum. This had never been blood-stained; there was no dyspnoea on exertion and no other symptom of cardiovascular embarrassment.

On examination the patient appeared to be a normal healthy man, rather younger than his age. He was not cyanosed. Attention was immediately called to the fingers, which displayed a noticeable degree of clubbing, with nails curved like an inverted watch-glass and of a moderately livid tinge (Fig. 1). It was soon discovered that the toes showed a similar abnormality (Fig. 2). The patient repeatedly stated that he had always had large nails, and remembers quite distinctly his mother telling him that they had been so since childhood. No information was obtained as to whether this peculiarity had occurred in other members of the family. The patient is an only son, and lost his father when still very young. His mother lives in Canada.

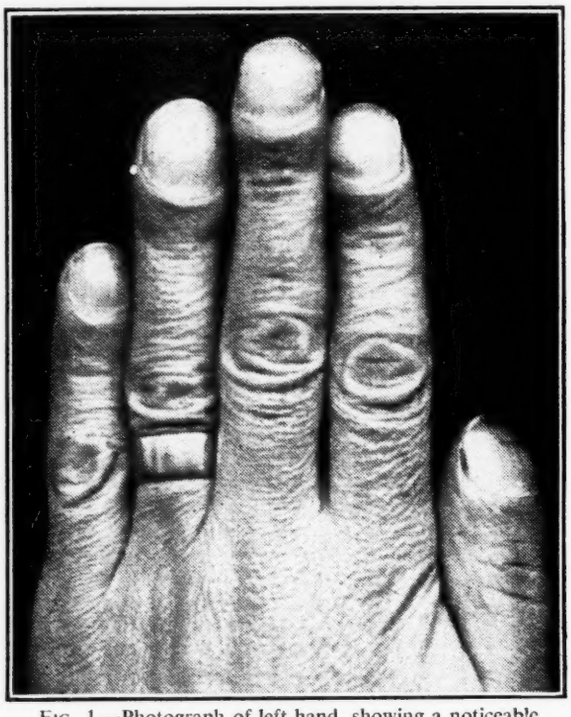


FIG. 1.—Photograph of left hand, showing a noticeable degree of clubbing.

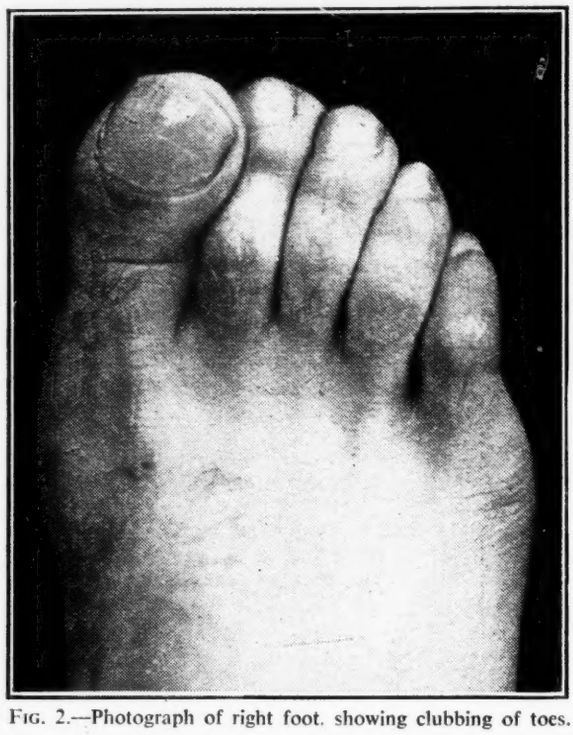


FIG. 2.—Photograph of right foot, showing clubbing of toes.

The heart was not enlarged and the sounds were clear. There were occasional extrasystoles without subjective distress. An electrocardiogram was normal, except for occasional ventricular extrasystoles. His blood pressure was 130/80. The lungs expanded normally and on percussion gave a

slightly hyperresonant note. On first examination a small group of crepitations were heard over the right interscapular region: this finding was not confirmed in subsequent examinations. A radiograph of the chest showed a moderate degree of chronic bronchitis and emphysema, such as is often found in patients who have been gassed. The sputum was negative for tubercle bacilli, and the sedimentation rate was 6 mm. at the hour. A blood count showed normal values for red blood cells, haemoglobin, and white blood cells, with normal distribution.

The right lung was then injected with lipiodol by the intratracheal route and a bronchogram was taken (see Plate). This led to the discovery of an unsuspected cavity about half an inch in diameter in the right upper lobe. The distribution of the lipiodol was normal in the other bronchi. Unfortunately the patient refused to undergo injection of the left lung on account of a mild iodism after the first injection.

DISCUSSION

Two points are obviously of interest in the diagnosis of this case: first, what is the nature of the cavity shown in the bronchogram; and, secondly, can any relation be established between the condition of the lungs and the clubbing of the fingers and toes? The most probable explanation of the cavity is that it is a lung cyst. There is no evidence, either local or systemic, of tuberculosis or of non-tuberculous lung infection. The outlines of the cavity are not shown in the chest radiograph. As to the second point, it is evident that no recent infective or other pathological process could explain the clubbing of the fingers and toes, as this occurred very early in childhood. A causal relation might, with the greatest reservation, be assumed with a congenital lung cyst, especially as we do not know whether a bronchogram of the left lung would have shown a similar and perhaps more extensive process. But I would like to stress the words "with the greatest reservation."

One fact certainly emerges from the study of this case—that is, the importance of bronchography. I think it is worth while emphasizing this point, as in a recent paper Dr. Seaton (1938) stated that clubbing of fingers without an apparent cause is not uncommon. I venture to suggest that this statement is rather far-fetched, and that the condition would be found to be quite infrequent provided the cases were investigated thoroughly enough and a chest was not dismissed as normal merely on clinical and radiological evidence.

As I myself am presenting a case of congenital clubbing of the fingers and toes it is obvious that it is not my wish to deny the existence of such a condition: the familial incidence in some cases, as reported in Dr. Seaton's very interesting paper, would indeed be sufficient to establish it firmly.

SUMMARY

A case of congenital clubbing of fingers and toes is described in which a radiograph of the chest did not show any marked abnormality, while a bronchogram revealed an unsuspected cavity in the right upper lobe. The nature of this cavity, believed to be a lung cyst, is discussed, with its possible relation to the clubbing of the fingers and toes.

The importance of bronchography in the diagnosis of obscure cases is emphasized.

I wish to express my gratitude to Dr. Ernest Fletcher, physician to Queen Mary's Hospital for the East End, for permission to publish this case and for helpful advice and criticism.

E. MONTUSCHI, M.D.

REFERENCE

Seaton, D. R. (1938). *British Medical Journal*, 1, 614.

Rupture of an Ovarian Dermoid

(WITH SPECIAL PLATE)

So uncommon is the rupture of an ovarian dermoid that the following case seems of sufficient interest to be recorded.

CASE RECORD

A single woman aged 55 was admitted to Charing Cross Hospital as an emergency under the care of Mr. R. A. Fitzsimons, on whose behalf I saw the case and by whose permission these notes are published. She was seized with a sudden sharp pain all over the abdomen but felt more severely in the right iliac fossa. She was emphatic that it was not of a colicky nature and in no way resembled bowel pain, and stated that the abdomen was sore to the touch. Two days previously she had vomited, and on the onset of the acute pain there had been a feeling of fullness in the abdomen with retching, but no recurrence of the vomiting. The bowel habit over many years had been constipated, with a definite feeling of obstruction to the passage of the faeces. There was no disturbance of micturition; her menstrual periods, which began at the age of 17, had been regular, although painful, until an uneventful menopause at the age of 50. The only point of interest in the past history was a bilious attack two months prior to admission—since a hand passed up to the liver at the time of operation revealed the presence of gall-stones.

On examination the patient did not appear ill; her temperature was 99°, the pulse 116, and her tongue clean. The abdomen was diffusely tender and rigid, more so below the umbilicus than above, and more to the right than to the left of the midline. No abdominal mass was palpable. The rectum contained a quantity of constipated faeces, and a mass of similar consistency in the pouch of Douglas was thought, wrongly, to be faecal material in the sigmoid colon. A diagnosis of mild unlocalized peritonitis was made, probably not of appendicular origin. Operation was advised and accepted.

A lower paramedian incision was made and the peritoneal cavity was found to contain fluid resembling sebaceous material, of which some three pints were removed by suction. The source was found to be a collapsed left ovarian cyst; the site of rupture, through which hair was protruding, was on the right-hand side, the solid portion occupying the pouch of Douglas. The cyst was removed, appendicectomy performed, and a drain left down to the pelvis. The tumour measured some eight inches in diameter, and its contents are shown in the photograph here reproduced (see Plate). *Staphylococcus albus* was grown on culture of the fluid. Dr. H. W. C. Vines reported as follows upon the specimen: "A multilocular simple dermoid cyst presenting no unusual features." There was no drainage, and the patient made an uninterrupted recovery, being discharged on the fourteenth day after operation.

K. L. JAMES, M.S., F.R.C.S.
Charing Cross Hospital, W.C.2. Surgical Registrar.

H. Mai (*Münch. med. Wschr.*, March 18, 1938, p. 393) reports on the use of convalescent serum in the treatment of acute anterior poliomyelitis in children. His statistical survey embraces 335 cases, of which 145 were treated with convalescent serum while 190 had no serum. The serum had no effect when given in either the preparalytic or paralytic stage. The mortality among the children treated with serum was higher than among the children who had no serum, but this was probably due to the fact that recourse to serum was frequently had in very severe cases with signs of respiratory paralysis. On the whole the serum proved neither useful nor harmful.

Reviews

THE PECKHAM HEALTH CENTRE

Biologists in Search of Material. An Interim Report on the Work of the Pioneer Health Centre, Peckham. (Pp. 104; 2 plates; 3 plans. 2s. net.) London: Faber and Faber. 1938.

Dr. Scott Williamson and Dr. Innes Pearse describe themselves merely as "Biologists in Search of Material," but their humanitarianism, like cheerfulness, will "keep breaking through." Such a title for their second interesting and stimulating report on the work of the Peckham Health Centre errs on the side of undue modesty, especially in view of their admission that visitors to the centre are impressed by finding "a socio-medical institution throbbing with movement and gaiety." However, in justification of the title they have chosen, they lead off with an introduction based on broad biological principles, which is followed by Mr. J. G. S. Donaldson's pertinent commentary from the layman's point of view as to the importance of the experiment.

It is by this time fairly widely known that the centre takes the family as the unit for investigation, believing that only in this way can proper insight into the problems of the individual be obtained. To this rule there is only one, and an important, exception—the fiancé(e) of a member of the family. On the social side the opportunities for neighbourliness are an important asset of the centre, and one which has its medical aspects (has not Dr. Stephen Taylor recently written convincingly on the causes of the "Suburban Neurosis"?). Here we are naturally more concerned, however, with the valuable data of a more immediately medical sort which have been accumulated. It is perhaps surprising that out of 1,666 individuals about 180 were found in the course of routine examination to be suffering from major maladies, very few of whom were attending a doctor. It is less surprising, but rather depressing, to learn that minor maladies were ten times as frequently found—more than one often being found in the same individual. One clinical observation which is worth emphasizing is the frequency with which infestation by worms was found in those who persistently had less than 100 per cent. of haemoglobin. The findings at the centre agree with those of Professor Stanley Davidson that many women of the working class are on the borderline of iron starvation. The account of "devitalization" in its two forms of "hypotonia" and "dystrophy" (to adopt the authors' nomenclature) is full of valuable and suggestive hints for all medical men, as is the discussion of the causes of malnutrition in those apparently adequately supplied with food.

Two other points in the report are worthy of comment. Between the two states of health and disease there is a considerable "no-man's land" in which the individual may feel well but is using up the powers of compensation with which his body is endowed. The authors label this, not too happily we think, "well-being"; well-seeming would perhaps be more accurate. The importance of preventive treatment at this stage is obvious; the opportunities of giving it are few, except under such conditions as obtain at a health centre like this. The other point is the avoidance of *advice*—the facts are so presented to the individual that he can form his own conclusions as to the right thing to do. Herein they follow the method of certain schools of psychotherapy. They realize that "individuals from infants to old people resent or fail to show any interest in anything initially presented to them through discipline, regulation, or instruction." This, alas, is often only too true!

It may be said that this is the report of enthusiasts; well, enthusiasm is necessary to carry through such a task. Visionaries, perhaps—but such visions have a way of coming true. In any case, we recommend the reading of this report and, still more, a visit to the Peckham Health Centre as an admirable tonic for any doctor who in moments of depression feels that his is the task of Sisyphus.

OBSTETRICS AND GYNAECOLOGY, 1937

The 1937 Year Book of Obstetrics and Gynecology. Obstetrics, edited by Joseph B. De Lee, A.M., M.D. Gynecology, edited by J. P. Greenhill, B.S., M.D., F.A.C.S. (Pp. 704; 137 figures. 2.50 dollars; 10s. 6d., postage 6d.) Chicago: Year Book Publishers; London: H. K. Lewis and Co. 1938.

The Chicago Year Books of Medicine have now reached their thirty-seventh edition and are well known to, and appreciated by, English readers; the need for such a compendium as a yearbook is indubitably growing every year in all departments of medicine, for neither practitioner nor specialist can hope to establish direct contact with the new ideas which are being promulgated in such profusion and in many languages. The chief difficulty of the busy man is that he has not enough leisure to sift out the new ideas from the mass of verbiage in which they not uncommonly lie buried; he looks to a yearbook to do this for him. And further, not all new ideas are improvements on the old, therefore the reader requires critical guidance in evaluating the new departures that are presented to him. *The 1937 Year Book of Obstetrics and Gynecology*, edited by Professor De Lee and Dr. Greenhill, is exemplary in all respects. More than three hundred papers are summarized more or less succinctly, and to all but a very few there is appended an editorial comment which the reader will find extraordinarily helpful. The comments are attractively written and even when brief are never perfunctory. As an example of American terseness may be quoted the verdict on a communication in the well-known Scandinavian *Acta Obstetrica*: "O.K. Ed.)." Another of Professor De Lee's comments, this time on the "Endocrine Background of Toxaemia," is worth reproducing: "(Perhaps the author is groping towards the light of truth. Good luck! Ed.)." A series of nineteen papers dealing with analgesia and anaesthesia in labour are of especial interest, and incidentally are the subject of the longest and raciest editorial comment in the whole book. Beginning with "Mrs. Pithecanthropus Erectus," who had no more pain than the animals her man fought for food, the editor deplores the effect of "civilization (?)" in making women intolerant of pain, but relates with approval the case of the young primipara who refused an anaesthetic on the ground that "she wanted to drink deep of life," which she regarded as a great adventure. The conclusion reached is that there is no completely harmless anaesthetic or analgesic and that women must pay a price for their relief from pain.

In the gynaecological section will be found notes of a series of twelve papers dealing with vaginal infection by trichomonas which will be of interest to the pathologically minded gynaecologist. Senior readers of the section will note with interest the revival of an old method under a new name: introducing steam into the uterine cavity (atmocausis, it was called) had a short and undistinguished career in the early years of the present century but was soon abandoned; it appears to be now "staging a comeback" under the name of vaporization.

Many papers dealing with endocrinology are brought to the attention of the reader, but the most useful feature of this section is a series of four charts, the work of Dr. Greenhill, depicting the functional activities of the pituitary and ovarian hormones throughout the menstrual cycle, pregnancy, and the puerperium. Dr. Greenhill has come as near to explaining this very complex subject as the human mind can be expected to get, and if the reader cannot master it with the aid of the charts he should give it up as a bad job and hope that time will bring simplification.

SHORT-WAVE DIATHERMY

Short-Wave Diathermy. By Tibor de Cholnoky. (Pp. 310; 38 illustrations. 20s. net.) New York: Morningside Heights, Columbia University Press; London: Humphrey Milford, Oxford University Press. 1937.

In this book Dr. Tibor de Cholnoky presents a useful survey of the subject up to its present state of development. As the majority of publications on short-wave diathermy have been in foreign languages an outline of the subject in English, with accounts of the experimental work which has been done, is timely. It opens with a brief and simple account of the physical aspects of short-wave diathermy, recapitulating the essentials of electric heat production. The author is chiefly concerned with the medical side of the subject and does not discuss in detail the physics of the production of short waves or the technical details of apparatus, and for these the reader must consult standard textbooks.

Much interest has been aroused regarding the possible action of short waves on bacteria, and various workers hoped that a lethal or at least an inhibitory effect on their growth would be produced. By experiments *in vitro* Schliephake and Haase found that streptococci were killed and tubercle bacilli at body temperature were killed after some hours' exposure. The results of other workers have been inconclusive and contradictory. Differences in apparatus used, and the impossibility at present of measuring with accuracy the intensity of the electric field, are factors accounting for variation in results. Experiments on plants seem to show that short waves have an accelerating effect on growth and sprouting, and there is scope for further research in this direction.

After chapters on wave-lengths, and on clinical technique and general principles, comes Part V on the clinical applications of short-wave diathermy. Here the most outstanding effects described are those first reported by Schliephake in the rapid and successful treatment of boils and carbuncles. The author also cites Schliephake's encouraging results in forty cases of lung abscess in which progress was recorded by radiographs and laboratory tests. In dental conditions, too, further work should be interesting and valuable, and in bone and joint injuries short-wave diathermy has proved its usefulness. The earlier workers with short waves expected that in addition to focal heating effects short waves would be found to have "specific" effects varying with wave-lengths, etc. The author believes that at present there is no evidence to support any claim for the existence of specific effects, and regards short-wave diathermy entirely as a form of heat therapy, the beneficial action of which is due to the intense and lasting hyperaemia it provokes.

Dr. Tibor de Cholnoky has written a cool and level-headed review of the work achieved by workers with short-wave diathermy. If the book is lacking in the freshness and enthusiasm of books written from personal experience it is the verdict of an impartial observer, and as such is to be valued. There is an ample bibliography.

PROGNOSIS OF ACUTE DISEASE

Les Éléments du Pronostic dans les Maladies Aiguës. Notes de Pratique. By A.-B. Marfan. (Pp. 80. 20 fr.) Paris: Masson et Cie. 1937.

This study of the prognostic factors in acute diseases by Professor Marfan will be found helpful to many. "Never prophesy unless you know" is in medicine a counsel of perfection, for we are daily called upon to prophesy in matters wherein certainty is difficult if not impossible. The author does not accept the view that the public is more willing to excuse an error of diagnosis than one of prognosis; rather the truth is that the public can judge the latter more readily than the former. An error in diagnosis is a matter on which only another medical man is capable of expressing an opinion, but all the world can recognize an error of prognosis. A medical man can shelter his reputation by guarded answers to the questions put to him, but if he considers the interest of his patient and of medical science he must know the signs which forecast the course and the issue of the malady.

Professor Marfan considers that it is in acute diseases that prognostic errors are most easily made and have the most serious consequences. He starts by discussing the prognostic factors in typhoid fever because the principles apply with minor differences to the other acute diseases. This recalls Osler's remark that he could teach all the general principles of medicine from typhoid fever. Fortunately for the public cases of typhoid fever are much less common than they were. But in consequence medical students qualify and go out into the world with a much less adequate knowledge of a disease which still crops up unexpectedly, and which calls for prolonged and skilful treatment, however expectant in type. There is therefore abundant justification for pride of place to be accorded to this disease in the book before us. Subsequent articles deal with lobar pneumonia, bronchopneumonia, diphtheria, scarlet fever, meningitis, endocarditis, and pericarditis. It is a sign of the importance attached to a study of rheumatism at the present time that one-third of the book is devoted to the last two subjects. The whole book is practical, lucid, and interestingly written.

ORAL SURGERY

Surgical Diseases of the Mouth and Jaws. By Earl Calvin Padgett, B.S., M.D., F.A.C.S. (Pp. 807; 334 figures. 45s. net.) Philadelphia and London: W. B. Saunders Company. 1938.

This book will have an appeal to both surgeons and dentists, but the author's ambition has been even wider, since he tells us in his preface that he has made an attempt to present material which will be of interest "to certain special practitioners such as the 'nose and throat' specialist, the dermatologist or radiologist who see conditions which in certain instances overlap from their field into that of oral surgery." A large field is covered, as may be exemplified by the fact that there are chapters on fractures and dislocations, dental extraction, inflammatory diseases of the antrum, and articles on radiation therapy and speech training in cases of cleft palate. The author has had the assistance of a number of colleagues, to whom he refers in the preface, where he also makes a remark which reminds us of a not unfamiliar problem in other branches of surgery: "With Dr. Shelden and Dr. Louis James there took place considerable discussion concerning the dividing line between those cases which should be submitted to the orthodontist and those which should be managed by the oral surgeon." The field covered is even wider than the title implies, since

Chapter XVIII deals with inflammation and diseases involving the neck, and accounts are given of tuberculous lymphadenitis and œsophageal diverticulae. Diseases of the normally placed thyroid are not included, but lingual goitre and tumours and cysts of the thyroglossal tract come within the scope of the book. Clefts of the lip and palate are taken up in much detail and are well done, and this section constitutes one of the best in the book.

There is a brief account of the development of the modern operation for trigeminal neuralgia in which we should like to have found a reference to Sir Victor Horsley, who in December, 1890, attempted sensory root section for the condition, whereas the Spiller-Frazier operation was developed between 1898 to 1901. The author states the subzygomatic route for alcohol injection to be the safest and best. Few neurosurgeons would agree, however, this route having been almost universally abandoned for the Hartël approach from outside the angle of the mouth. While minor criticisms such as these apply to certain sections, we have nothing but praise for the work as a whole. It is easily read, the type being clear and the text divided into well-indicated sections, while line drawings and photographs amply illustrate it. This is a valuable work which in our opinion comes near to achieving the rather ambitious aim of its author.

Notes on Books

Mr. GUY BUTLER has all the qualifications to write a book on *Athletics and Training* (Adam and Charles Black, 5s.). First as an athlete: he was an amateur champion while still a schoolboy, and subsequently, in a long and distinguished career, all but achieved the highest honour in this branch of sport. He has more recently devoted himself to athletic journalism and has adopted the profession of trainer. He knows enough of the scientific side of the subject to know what he does not know, and he realizes the limitations of academic teaching for the aspirant to success on the track. Most books on training are full of ill-digested physiology or of pseudo-scientific jargon. Mr. Butler has wisely stuck to his last; he has produced an eminently practical work in which every track and field event is dealt with technically. The subject of diet, upon which so much ink is unnecessarily spilt, is dismissed in a few lines. To illustrate how individual this detail must be the author states that when Nurmi beat the world's record for six miles his lunch antecedent to his effort consisted of almost all the things which theory forbids the athlete.

Dr. DONALD PATERSON has thoroughly revised his book on *Sick Children, Diagnosis and Treatment*, for a third edition (Cassell and Co., 12s. 6d.), and this can again be recommended as a concise and practical account of modern paediatric practice. The section on anaemia, to which attention was drawn in a review of a previous edition, has now been brought into line with modern work on this subject, and there are new accounts of acute and chronic sinus disease in childhood. Practitioners will find this a useful work, and the prescriptions freely scattered in the text are a valuable feature of the book.

The Adolescent, by ADA HART ARLITT, Ph.D., is published by the McGraw-Hill Publishing Company, price 8s. 6d. This guide for parents in the upbringing of their children is essentially American for the Americans, and so has less application in this country. It is pleasant, easy reading, and on the whole full of common sense. The author makes no effort to penetrate to the deeper motivations of adolescent conduct, which is probably commendable in a book intended for the laity, though it makes it appear rather superficial to the more initiated. This is one of the many books which can safely be recommended to parents who wish to study the many problems of their growing children's lives.

The second English edition of *Poulsson's Textbook of Pharmacology and Therapeutics* has been prepared by Dr. STANLEY ALSTEAD (Heinemann, 25s.). The general character of the volume has not been changed, but the recent rapid advances in pharmacology have called for extensive revision. Important new advances such as sulphonamide and protamine-zinc-insulin receive notice.

Preparations and Appliances

A NEW PROSTHESIS

(WITH SPECIAL PLATE)

Mr. A. WYNN GREEN (Wolverhampton) writes:

The statistics concerning a one-eyed person are somewhat startling. Boissonière gives the proportion in England as 1 to 162 persons, and this number must have been considerably increased by eye injuries during the war. Nor is the number decreasing to any extent; for, although many eyes are saved nowadays by the more advanced methods of surgery, the risks are being increased by motor accidents and by accidents in industry. The importance of any advance in the making of a prosthesis cannot be too much stressed: the one-eyed person is acutely conscious of his physical defect, and therefore suffers psychologically as well. Moreover, he is always at a disadvantage socially and in obtaining his livelihood. A skilfully devised, well-fitting prosthesis that can be worn with confidence, does not give rise to any eye irritation, and is within the reach of limited incomes: this seems to me a branch of ophthalmology well worthy of attention.

Considerable as are the advantages of the use of Snellen's reform eye, nevertheless it has this disadvantage—that it can be employed with success only in a socket of average size, unless (in cases where the socket is larger than normal) a base of porcelain, platinum, or gold is fitted; but this adds greatly to the cost.

A prosthesis recently devised by Mr. L. B. Dibbens of Stafford has been used with satisfactory results by two patients of mine, who each had an eye removed because of growths, on the upper lid in one case and on the lower lid in the other. In neither instance was a satisfactory plastic operation possible, because the tumour had so extended as to destroy the lid structures. This particular prosthesis is clipped on to the inside of a spectacle frame; it consists of a transparent plate of amyl acetate, about 3 mm. thick, on the orbital surface of which is painted with oils the representation of an eye, the upper and lower lids, and the surrounding skin (Plate, Fig. 1). The painting is done with the patient present, so that the eye may be accurately imitated for size as well as for colour of iris and of surrounding flesh. On the anterior surface a small circular cavity is cut out, and into it is placed, to represent the pupil, a black bead, which is covered with a section of an amyl acetate or calcium glass ball to form the cornea. The whole plate is cemented or screwed to a tortoiseshell clip, which is fixed to the spectacle frame. Great care must be exercised in fixing the angle of the plate, and also in determining the size of the painted eye, for refraction through the plate will alter the appearance of this considerably. The cost of the whole fixture is within the means of an ordinary hospital patient.

One of my patients, Mr. S., had an epithelioma of the lower lid, destroying the surrounding structures. Excision was performed, with radium treatment, by Mr. Milnes Walker. Figs. 2 and 3 show him before and after fitting the prosthesis. Figs. 4, 5, and 6 illustrate the case of Mr. T., who had a large sarcoma of the left upper lid, which had caused avulsion of the eyeball.

INSULIN AND DIABETES: THE PRESENT POSITION

STEPHEN PAGET LECTURE BY PROFESSOR BEST

The twelfth Stephen Paget Memorial Lecture under the auspices of the Research Defence Society was delivered on June 9 by Professor C. H. BEST of the Chair of Physiology, University of Toronto, who took as his subject: "Insulin and Diabetes: The Present Position." Professor Best, whose name is associated with that of Sir Frederick Banting in the discovery of the hormone, is visiting this country for the purpose of receiving the Fellowship of the Royal Society.

The lecturer began by recounting the familiar story of the early work on insulin carried out in Toronto. He said that the leading part played by Banting in the initiation and prosecution of the research could not be overemphasized, and he also paid a tribute to the memory of Professor J. J. R. Macleod, who made possible the rapid extension of the findings which Banting and he were able to obtain in the spring, summer, and early autumn of 1921. One of their first attempts to prepare insulin in quantity for clinical trial was made by administering gallons of solution of a substance known as secretin to an anaesthetized ox. They thought that by this procedure they might exhaust the enzymes of the pancreas, and then by performing a pancreatectomy render available supplies of insulin. They removed the organ and did make some active extracts from it, but it was obvious that this was not a practicable procedure. They then resorted to the use of alcohol as an agent for the precipitation of inert material, including the enzymes, and their efforts immediately met with considerable success.

"One day we made a special lot of this material from the pancreas of one beast. The pancreas was removed aseptically. We tried the material on our colony of depancreatized dogs and then on ourselves. As the effect on Banting and myself was only local we decided to go ahead with the administration to a severe case of diabetes. This was done on January 11, 1922. The patient was one Leonard Thompson of Toronto General Hospital, under the care of Dr. Walter Campbell. He was not a particularly co-operative patient, and often threatened to spoil his interesting history by motor-cycle accidents."

From Early Experiment to Large-scale Production

Professor Best showed portraits of another early patient—a little diabetic boy who played about in the laboratory before insulin was really available. His recovery under insulin was a matter of great pleasure to Banting and himself. "Some people would go so far as to withhold insulin from a diabetic child—always the child of someone else; they are stoics over the pain of others. Never yet have I come across anyone who had the courage of his convictions to a sufficient extent to withhold insulin from his own child."

The preparation of insulin was now on a secure scientific basis to facilitate large-scale production. He gave a brief description, accompanied by a colour film, of the present methods, from the bringing into the laboratories of the mass of ox pancreas to the final packaging of the sterile phials. He also showed, among other charts, one illustrating the insulin content of the pancreas obtained from the animal at different ages. These findings had been obtained by Dr. Scott and Dr. Fisher. The content was much greater during intra-uterine life than after birth, and, although this fact was not appreciated at the beginning, foetal pancreas was in fact used as a source of insulin for quite a long time. In detailing the work on the purification of insulin and the obtaining of insulin in crystalline form, Professor Best mentioned that quite early in the history of this investigation the people who had the purest insulin found the greatest difficulty in preparing crystals, while those who had relatively crude insulin were exempt from this trouble. This was presumably because zinc or some closely related metal was present in the latter preparations (Scott).

On a superficial definition the action of insulin was to remove all the signs and symptoms of diabetes. Put more specifically, insulin accelerated the formation of a complex sugar which was apparently necessary for the proper functioning of the animal organism, and it prevented the wasteful formation of excessive amounts of sugar from other substances. Many efforts had been made to prolong the action of insulin. Here the lecturer reminded his audience of the success achieved by Professor Hagedorn and his colleagues in Copenhagen by the use of protamine, which when combined with insulin formed an insoluble substance that was absorbed slowly from the tissue spaces. This delayed action, in contrast to the more rapid or even evanescent action of the ordinary material, was well shown in the rabbit, and perhaps even better in the dog. This meant fewer injections a day in many cases of diabetes. It was later shown by Scott and Fisher that a mixture of protamine and zinc with the insulin had advantages over protamine-insulin alone. The suspension of the protamine-insulin mixture was much more stable when a trace of zinc was present. Zinc also prolonged still further the absorption of the active material. Therefore in North America zinc-protamine-insulin had largely supplanted protamine-insulin. More and more of the zinc preparation was being used, and at present 30 per cent. of all the insulin distributed in the United States and Canada was in that form. A further attempt had been made by placing some free insulin in the zinc-protamine-insulin mixture to give the clinician a prompt as well as a prolonged effect. He was not sure whether this was worth while or not, but more recently a group of workers in the United States had prepared a zinc-protamine-insulin which was clear and still had a delayed action, and this had the advantages that it could be sterilized as a solution and that the danger of uneven sampling from the bottles was eliminated. From the data so far afforded it appeared that the duration of the effect with this preparation was not quite so prolonged, but nevertheless it might be useful.

Mortality in Diabetes

Coming to the question of mortality in diabetes, Professor Best said that the Ontario figures were of first interest because nowhere else in the world had insulin been at the disposal of everybody who wanted it since 1922. It was perfectly true that here as elsewhere the mortality from diabetes in certain age groups had not come down and might be going up. But a study of the graphs showed that in the earlier age groups, from birth to age 19, a sharp decline was obvious. The difference in the curve of mortality at under-fifty and over-fifty was also evident. Another curve showed that more and more insulin was being used in Canada every year. Even the slump years 1929–31 showed no dip in this upward curve, proving that insulin was not a luxury! It meant that while the older practitioners did not easily take to insulin, the younger ones, trained in the more modern methods available, used it to an ever-increasing extent. While the medical student could not be expected to read the 10,000 publications that had appeared on the subject of insulin since 1922, he might be assured that he performed a most valuable function in spreading the knowledge of the modern treatment of diabetes and other diseases.

Vote of Thanks

Sir EDWARD MELLANBY, in proposing a vote of thanks, said that it had been his lot to attend patients suffering from diabetes in pre-insulin days. It was a mortification to feel that whatever one did one could only postpone the eventual issue for a matter of months. Nowadays one approached the diabetic patient almost with a jaunty air, knowing that one could turn him out to do his normal work within a few weeks. He was also one of the first

people in this country to make insulin, and he could appreciate the excitement which Banting and Best must have felt when they carried out their first experiments. One of the first two patients was a man who was brought in apparently in a moribund condition. He was six feet in height but weighed only six stone, and could not walk or stand. He left hospital after a month or two, and subsequently became managing director of a large steel company and was still living a completely healthy life. The discovery of insulin was only one of many advances in recent years which were the result of animal experiment. It was a curious situation that the greater the success of medical research in preventing or controlling disease the greater was the likelihood that, the disease being prevented or controlled, the triumph would be forgotten.

The resolution of thanks was seconded by Dr. R. D. LAWRENCE, and supported by Lord LAMINGTON, who presided.

MEYERSTEIN INSTITUTE OF RADIOTHERAPY

GIFT TO THE MIDDLESEX HOSPITAL

Sir William Bragg, President of the Royal Society, opened on June 9 the Meyerstein Institute of Radiotherapy at Middlesex Hospital. This is a self-contained unit of four floors, made possible by the generosity of Sir Edward Meyerstein, a great benefactor to the Middlesex, who, having already contributed £30,000 towards the cost of the institute, announced at the opening ceremony his intention of giving the remaining £16,500 necessary to complete it.

Staffing and Equipment

In the institute all forms of radiotherapy are available for both in-patients and out-patients, both hospital and private. It is closely linked with the main hospital, and the resources of the Middlesex staff and laboratories are available for the service of the unit. The honorary director is Dr. J. H. Douglas Webster, and there are five whole-time medical officers and a resident house officer, a sister, and six radiographers.

The most modern equipment, both on the radium and *x*-ray side, has been installed, and elaborate protective precautions have been taken. The treatment cubicles are all provided with duct suction ventilation giving a change of filtered air twelve times an hour. Protective lead has been embodied in the walls to prevent stray radiations from reaching the corridors, and lead has even been put into the flooring of the second floor, on which powerful tubes are installed, to prevent extraneous irradiation of the patients in the cubicles below. In every cubicle there is a two-way communication between patient and radiologist by means of microphones and loud-speakers. Two of the three cubicles on the ground floor contain shock-proof *x*-ray tubes, and the third is for teleradium. Here, with 4 grammes of radium, mass irradiation is carried out at 8 cm. distance. The radium when not in use is housed in a safe surrounded by ten inches of lead, and the transference of the substance to the applicator is effected pneumatically through a flexible tube.

The first and second floors are devoted to *x*-ray therapy, one for female patients and the other for male. The control of 200 kV shock-proof tubes is by a multiple interlocking device, so arranged that the apparatus as a whole must be switched on always in the same order—for example, no current can be conducted through a tube unless the appropriate cooling pumps are already working. In this way the plant has been rendered immune to abuse. The dose of *x* rays to the patient, measured either with an ionization chamber or by a calibrated clock, is completed automatically by the closing of a lead shutter on the tube head, and the interlocking is such that it is impossible for the patient to receive an overdose. There is also interlocking on the door of the cubicle, so that the moment the door is opened the lead shutter will close. On the first floor Siemens tubes cooled by oil are used, and on the second floor Metropolitan Vickers tubes, constructions which it is possible to dismantle completely, so that in the event of a broken filament or cracked target they may be taken to pieces, the faulty part replaced, and the whole reassembled. The couches and various centring and control devices are by Newton and Wright. The top floor is in part used for treatment by surface radium, with well-provided mould and mounting rooms.

The Opening Ceremony

At the opening ceremony, in the absence of Prince Arthur of Connaught, the president of the hospital, the guests were received by Mr. T. B. Money-Coutts, vice-chairman. Sir William Bragg, before declaring the institute open, referred to the reputation which Middlesex had sustained for many years in research and advance in radiotherapy. He believed that Sir Edward Meyerstein got the inspiration for his present benefaction when he found that as a result of this work the word "inoperable" had been struck out in relation to certain conditions and "operable" substituted. The application of radium and kindred radiations to the cure of disease and alleviation of suffering was not miscalled a romance. He himself, although not a medical man, had been in touch more or less with every phase of this progress. He remembered a day, many years ago, when he was at work in his laboratory and a young man entered and began to explain some of his theories concerning a magnetic detector. He was the future Lord Rutherford, who was afterwards to achieve unrivalled fame for his work on radio-activity.

The new institute (Sir William Bragg continued) had an interest to the scientific mind beyond its obvious purposes. It was an instance of the application of science to human need and desire. A correspondent in the *Times* had been complaining of the vagueness of the customary interpretations of the word "science." He himself thought there was nothing better than the words which the founders of the Royal Society employed in 1660 when they met to consider the beginnings of the study of experimental science—"the improvement of natural knowledge." Since the Society was founded there had been a very great "improvement," with tremendous changes in men's activities and powers. The improvement was due mainly to the extension of the natural senses through the development of instruments. With such extension a new world, unseen by the natural eye, came into view. Upon that unseen world the work of the institute depended. The radiations which it employed in its beneficent work were far beyond the range of human senses. They had effects of which humanity was glad to avail itself, but without the explorations of the unseen world nothing would have been known about them.

Before the ceremony closed Dr. Hans Holfelder, a friend of the director, presented to the hospital on behalf of the medical faculty of Frankfurt University a portrait of Professor Röntgen.

C. W. Laymon and H. E. Michelson (*Arch. Derm. Syph.*, Chicago, January, 1938) point out the immunity of certain areas of the body to the invasion of certain diseases and the rarity of lichen planus of the eyelids in particular. They report five cases and classify them into three types: (1) Typical lilac-coloured pitted and scaling papules; similar lesions occur elsewhere on the body. (2) An annular variety similar to that seen on the penis with the same type of lesion on other parts of the body. (3) A variety seen in brunette women aged about 30 in which the upper eyelids are discoloured with a brown, symptomless, retiform eruption, similar to that seen in a pigmented case of erythema abigne. Their cases responded to treatment with *x* rays and the injection of mercury bichloride.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JUNE 18 1938

CANCER AND HEREDITY

The idea has long been abandoned that the "cause of cancer" will be discovered, and it is now recognized that a malignant neoplasm is the resultant of a number of factors and that these factors are themselves variable according to the site and nature of the growth. Recently much attention has been paid to the possibility of a heritable factor, and with the application of strict genetic analysis many interesting points have become apparent which, though they cannot be claimed to make the problem of carcinogenesis simpler, yet draw attention to some of its complexities. About 1908 J. A. Murray and others pointed out that the progeny of mice with carcinoma of the breast were more liable to develop a neoplasm in this site than those descended from mice not so affected; as a result of these observations Maud Slye suggested that the incidence of spontaneous cancer was due to a simple Mendelian recessive factor. This view was not generally accepted, but it was necessary to secure strains of genetic purity before it could be put to the test. This can be achieved by repeated brother-sister inbreeding (strains which are pen-bred will not suffice), and after about thirty generations it can be shown that such a strain is genetically uniform. Since 1930 reports of investigations based on this method have been appearing, and the findings of different workers may now be profitably reviewed.

In regard to spontaneous mammary cancer in mice it was shown that pure strains could be obtained in which the incidence in each strain was reasonably constant, but this incidence varied between 0 and 85 per cent. in different strains and they could not be divided into two groups—those of high and those of low incidence—which would have been the case had mammary cancer been due to the action of a single gene. In a "high-cancer" strain the extreme liability to mammary cancer is seen only in the female, but if the males of the strain receive ovarian transplants (Murray[1]) or injections of oestrin (Lacassagne[2]) mammary cancer develops, but males of a "low-cancer" strain do not so respond. Cramer and Horning[3] demonstrated that the administration of oestrin induced characteristic histological changes in the adrenal and pituitary glands of mice of ordinary mixed strain and that this change arose spontaneously in mice of a high-cancer strain; these changes and the liability to mammary cancer could be inhibited by the administration of the thyrotropic hormone of the anterior pituitary.[4] In this particular strain it has been proved that there is no excessive secretion of oestrin but that there is an increased sensitivity of the tissues to this substance, which when given to normal mice in enormous doses produces mammary hyperplasia and sometimes carcinoma; it is not yet known whether these endocrinal tissue changes take place in all high-cancer strains. All that can be deduced from these experiments is that the susceptibility to cancer of the breast in mice is determined by chromosomal factors, but they throw no light on the factors controlling its incidence. That this is influenced by extra-chromosomal factors is suggested by the results of hybridizations between pure strains of "high" and "low" cancer incidence. It was found that the incidence in the first generation tended to resemble that shown by the strain from which the mother was derived; such an inheritance is non-Mendelian and can only be explained by the transmission of some factor either occurring in the cytoplasm of the ovum, during intra-uterine life, or by means of the mother's milk. Bittner and Little[5] have demonstrated that the incidence of cancer in female mice of a high-cancer strain is reduced if they are fostered by a mother from a low-cancer strain, and the reverse would also appear to be true. Furthermore, tubal ova from high-cancer strains have been transferred to uteri of low-cancer strains, and after twelve months no cancers have developed in the offspring. The final experiment of fostering some of these "transferred" mice on a high-cancer-strain mother has still to be performed, but the conclusions of these experiments that "the extra-chromosomal or maternal influence may tentatively be attributed as due to a breast-cancer-producing influence obtained by the progeny from the milk of high-cancer mothers" appear to be justified. What the nature of this milk-borne factor is remains to be discovered.

MacDowell and Richter[6] found that the incidence of mouse leukaemia is also influenced by maternal extra-chromosomal factors but that they are not transmitted in suckling. According to Lynch[7] and Andervont[8] the susceptibility of mice to lung tumours both spontaneously formed and induced by dibenzanthracene is inherited as a dominant characteristic. Lynch's work excluded the possibility of

[1] *J. Cancer Res.*, 1928, **12**, 18.
[2] *C. R. Soc. Biol.*, Paris, 1934, **115**, 937.
[3] *J. Path. Bact.*, 1937, **44**, 633.
[4] *Lancet*, 1938, **1**, 74.
[5] *J. Heredity*, 1937, **28**, 117.
[6] *Arch. Pathol.*, 1935, **20**, 709.
[7] *Amer. J. Cancer*, 1937, **31**, 77.
[8] *Publ. Hlth. Rep.*, Wash., 1938, **53**, 232.

a maternal factor, though it would appear that there is a modifying gene in the sex chromosomes. In animals other than mice the influence of heredity has been little studied, though Stark[9] found that in *Drosophila* some tumours are definitely sex-linked and hereditable. Gorer[10] has emphasized the importance of an appreciation of genetics in relation to tumour transplantation. A tumour arising in a genetically pure strain of mice can be transmitted successfully to all other members of the same strain and to those hybrids in which certain dominant genes are present. Furthermore, if the tumour is transplanted to a host lacking these particular genes it regresses after a short while and immune bodies to the tumour cells are found in the blood. Nevertheless, as Phelps[11] and others[12] have demonstrated, these immune bodies are not specific to the cells because they are tumour cells but because they are cells genetically different from the host's, identical immune bodies being produced by transplanting the normal organs of animals of distinct constitution. It is owing to the lack of recognition of the influences of genes in tissue immunity that false hopes have been raised as to the possibility of producing anti-cancer sera, and these observations will have considerable bearing on all future transplantation experiments.

Turning to human cancer, it is at once apparent that selective breeding such as has been achieved in the laboratory can never occur, yet it is reasonable to suppose that the liability to cancer is associated with genetic factors in man as well as in animals; this has been demonstrated in such conditions as familial polyposis of the colon,[13] and Cramer's[14] statistical survey has revealed that the familial incidence of mammary carcinoma is exceptionally high. The cancer family of Warthin, in which forty-three carcinomata appeared in 300 members, has been much quoted, and though a recent report[15] suggests that the cancer liability is disappearing in the descendants, all the observations are in keeping with cancer liability being associated with dominant characteristics. The immediate clinical application of these various observations appears to be related to the work of Cramer and Horning in which mice highly susceptible to cancer showed evidence of endocrinal imbalance and remained cancer-free after treatment with hormones antagonistic to oestrin. Already the male hormone is being used with favourable results in "chronic mastitis," regarded by many as a condition predisposing to cancer. If certain physical characteristics were observed to be frequently associated with cancer of a particular organ, persons with these characteristics could be kept under observation and treatment be instituted at the onset of any suspicious signs. The difficulties and perils of such a course of action are considerable, though it is only along lines such as these that preventive measures in cancer can be developed.

[9] *Amer. J. Cancer*, 1937, **31**, 252.
[10] *J. Path. Bact.*, 1937, **44**, 691.
[11] *Amer. J. Cancer*, 1937, **31**, 441.
[12] *Imp. Cancer Res. Fund.* 35th Annual Report, 1937.
[13] *Cancer Rev.*, 1930, **5**, 241.
[14] *Amer. J. Cancer*, 1937, **30**, 318.
[15] Ibid., 1936, **27**, 434.

MEDICAL CO-OPERATION BETWEEN ENGLAND AND FRANCE

Though the bonds uniting English and French medicine are numberless, it is surely not invidious to draw special attention to one which is singularly well designed to meet present needs. It is the Association pour le Développement des Relations Médicales entre la France et les Pays Etrangers (A.D.R.M.). The fact that this body co-operates in medical matters with other countries than those of the British Empire adds to, rather than detracts from, its usefulness to any special country, for it is in a certain sense becoming a central exchange or telephone putting many people of many countries in touch with one another. The directing force of the A.D.R.M., which in 1922 was recognized by the President of the Republic at that time as "reconnue d'utilité publique," is the well-known surgeon, Professor Hartmann, who has endeavoured, often in the face of great difficulties, to make Paris a Mecca for medical pilgrims of all nations in reality as well as in name. Behind him are Dr. Mathé and a full-time assistant, Mademoiselle Huré, whom medical visitors to Paris find a living encyclopaedia. In her office in the Faculty of Medicine (Salle Béclard), 12, rue de l'Ecole-de-Médecine, she is to be found every day between 9.30 and 11 and between 2 and 5 dispensing information in whatever language an inquirer addresses her. To appreciate her services, it has only to be realized that before they were available a foreigner coming to Paris to follow postgraduate courses had to run the gauntlet of multiple forms and regulations. First he had to attend at an office open only three times a week and for just two hours at a time; and then, if he had been successful in obtaining the necessary document, he had to hie himself off to some other office to pay his fees after being kept waiting in a queue for an unconscionably long time. Now all he has to do is to confide himself and his contributions to Mademoiselle Huré, who not only takes charge of all technical formalities but also gives invaluable advice on where to go and whom to see.

At the annual meeting of the A.D.R.M. held this year an interesting account was given of its

activities during 1937. An incoming stream of distinguished medical foreigners has been counterbalanced by an exodus of French apostles of medicine to different countries: Professors Abrami and C. Richet to the U.S.A. and Mexico, Cunéo and Lereboullet to Italy, Fiessinger and Lian to Sweden, Sergent to South America, Baudouin to the U.S.A., Besançon to Portugal and Hungary, and Brumpt to the Near East. With the support of the French Foreign Office, the Association has promoted the exchange of numerous medical students of several countries with those of France. In the case of Czechoslovakia alone, a three-day visit of more than sixty doctors to Paris was organized last October, and special lectures and demonstrations were provided for them. A return visit will be paid to Prague in September of this year. It is no secret that only a few years ago Professor Hartmann's efforts to promote international co-operation in the medical field encountered considerable xenophobia on the part of the more excitable elements among the French medical students, temporarily stampeded into believing that the development of the Paris school of medicine as an international centre would be to their detriment. The following statistics reflect, to a certain extent, this state of affairs. In 1929 there were as many as 144 foreigners registered as candidates for the University diploma. The corresponding figures for 1935 and 1936 were only forty-four and nine respectively, whereas in 1937 the registrations had risen to fifty. The figures for the State diploma in the same period follow the same curve, with twenty-seven and twenty-two registrations in 1935 and 1936 respectively, and as many as forty-three in 1937. Between 1936 and 1937 there has also been an appreciable rise in the number of foreigners attending postgraduate courses. There seems good reason, therefore, to believe that the hospitality and facilities provided by the Paris school of medicine for the foreign visitor are becoming more and more appreciated by him.

THE RADIUM INSTITUTE AND MOUNT VERNON HOSPITAL

The union of these two bodies is now complete. This means two things: in course of time expense will be saved by the elimination of duplicate services; but more important still will be the concentration of resources for the treatment of the sick, the prosecution of research, and the training of radiotherapeutists. For the moment the work of the two institutions will go on as hitherto, but use will be made of the resources of one body to supplement the other—thus the deep therapy plant at Mount Vernon will be used for the patients of both. It is intended eventually to concentrate most of the work both on the therapeutic and research side at Mount Vernon, where there is ample bed accommodation and good pathological and physical laboratories, but to keep the out-patient department and offices in London. Negotiations are taking place between the Medical Research Council and the new body for the continuance of the Radium Beam Research as a clinical research unit of the Medical Research Council. Arrangements are also being made whereby the Prophit Trust money held by the Royal College of Surgeons for the Radium Institute shall be used to provide a comparative test of the relative therapeutic values of radiation produced by a radium beam and that by a 250 kV deep therapy plant. The experiment has the approval of the Radiological Committee of the Medical Research Council and the British Empire Cancer Campaign. In order to ensure as strict a comparison as possible the work will be undertaken by the staff of the Radium Beam Therapy Research. The secretary of the now completely amalgamated body, the Radium Institute and Mount Vernon Hospital, is Mr. T. A. Garner.

THE NARCOTIC DRUG TRAFFIC IN EGYPT

Russell Pasha, in his report of the work of the Egyptian Narcotics Bureau for 1937,[1] recalls the progress which has been effected during the last decade in combating the illicit traffic in dangerous drugs. He contends that "the wholesale manufacture in Europe of drugs for the illicit market has ceased." Moreover, by restricting supply he has raised the prices of narcotics. "Whereas in 1929 the wholesale price of illicit heroin in Egypt was £E60 the kilo, it is now in the neighbourhood of £E600 the kilo, and is entirely out of the reach of the fellahin." By the abolition of the capitulations foreign traffickers are now dealt with in the Egyptian courts without the intervention of foreign consuls; severer penalties are inflicted, up to imprisonment for five years and a fine of £E1,000. Russell Pasha warns the Egyptian Government against the return of wealthy traffickers who have been deported, and urges the authorities to "be adamant in refusing re-entry of these incorrigible foreigners who so nearly brought Egypt to its death." The world's supply of contraband heroin still passes from the Far East through the Suez Canal to Europe and America, and though some "will inevitably drop off at Suez and during the canal transit," the local situation is now well in hand. A clean capture of 36 kilos of opium and 2.75 kilos of hashish in course of transit from Palestine to Kantara is reported. In all 552 kilos of opium were seized during 1937, chiefly in "Sinai," Suez, and Kantara. In regard to the treatment of narcotic addiction, experience in Egypt confirms the conclusions arrived at in the United States—namely, "that there is no medicine known which will cure one addicted to the use of narcotic drugs without his consent or against his will." So-called cures are

[1] Central Narcotics Intelligence Bureau. Egyptian Government Annual Report for 1937. Govt. Press, Bulâq, Cairo, 1938.

held to be "not cures at all, but merely temporary denarcotization of basically unstable and abnormal persons." Addiction in Egypt, while decreasing in the cities, is increasing in the provinces, especially in those adjacent to the Suez Canal and the Palestine frontier, while hashish is the narcotic most frequently resorted to. During last year 2,866 persons were accused of possession, trafficking, cultivation, or addiction, and 1,802 were committed and sentenced to imprisonment, accompanied in most cases with fines. Illicit cultivation of the opium poppy has been increasing in Upper Egypt, but the Narcotics Bureau, by means of aeroplane patrols, has located and photographed several hundred acres of flowering opium poppy and secured conviction of the cultivators. Attention is again directed to "the harmful drinking of a black brew of adulterated tea." The International Tea Bureau, however, is, by means of travelling motor caravans, teaching the villagers how proper tea should be made. Russell Pasha urges the reduction of the heavy import duties on tea and tobacco; by encouraging the use of "these harmless creature comforts" he hopes that resort to dangerous narcotic drugs might thus be lessened.

EFFECTS OF ANOXAEMIA IN ANGINAL SUBJECTS

It is generally accepted that anginal pain is brought about by ischaemia of the myocardium, but it is not known whether this acts entirely or partly by reducing the supply of oxygen or in some other way. It has been suggested that the pain is caused by certain products of metabolism which accumulate when the flow of blood through an active muscle is deficient, and according to this view lack of oxygen is not the most important factor—but according to R. L. Levy and A. L. Barach[1] it is. They devised an apparatus for inducing oxygen want without the necessity for rebreathing, and observed the effect of inhaling air with an oxygen concentration of 12 per cent. on thirty-seven patients with heart disease, nearly all of whom had angina, and on eleven with normal hearts. In the experiments the saturation of arterial oxygen fell to an average level of 75 per cent. and the pulse rate, respiratory rate, and systolic blood pressure were usually increased. The effect on venous pressure was variable, but the circulation time was always decreased in the patients with cardiac disease, except in two with aortic stenosis. In the normal group the circulation time was only slightly decreased. The electrocardiograms of the patients with heart disease altered in form, the T wave becoming flattened or inverted and the RS–T segment deviating, as is sometimes observed in spontaneous angina. Pain developed during the test in about half the patients with angina but in none of those with normal hearts. It was found, however, that there was no uniformity in the conditions which gave rise to pain: a patient might have pain in one test but not in another, and it was impossible to correlate its onset with the changes in pulse rate, blood pressure, venous pressure, circulation time, or saturation of arterial oxygen, except in the two cases of aortic stenosis, in which a sharp and prompt response always took place under given conditions. Levy and Barach reconcile the variable results of their experiments with their belief in the importance of anoxaemia in the production of cardiac pain on the hypothesis that there are various mechanisms, particularly quickening of the rate of circulation, which can compensate for the reduced saturation of arterial oxygen. The constancy with which pain could be produced in aortic stenosis is thus correlated with the unchanging rate of circulation in these cases. The test can be regarded neither as reliable nor as safe for the diagnosis of angina or coronary insufficiency, as in this series severe symptoms occurred in two instances; but the results show at least that anoxaemia is one important factor in the causation of cardiac pain.

[1] *Amer. Heart J.*, 1938, **15**, 187.

THE DOCTORS' COOKERY BOOK

The continued concern of the medical profession with the more practical aspects of nutrition is reflected in the publication to-day of *The Doctors' Cookery Book* (British Medical Association, 4d.). This is a grandchild of the 1933 report of the B.M.A. Nutrition Committee, and the direct successor of *Family Meals and Catering*. The committee's original task was "to determine the minimum weekly expenditure on foodstuffs which must be incurred by families of varying size if health and working capacity are to be maintained, and to construct specimen diets." Dietary tables were drawn up, applicable to families of different sizes, and with the help of medical officers of health these diets were priced. Useful as was this report, the chain from physiological laboratory to market and kitchen remained incomplete. With suitable expert assistance the committee therefore proceeded, in 1934, to the preparation of *Family Meals and Catering*. The purpose of this latter booklet was to translate the most widely useful of the above diets (that for a man, wife, and three children aged 6–8, 10–12, and 12–14 years) into the practical form of menus, recipes, and shopping lists for three weeks. It received a ready welcome from local authorities, and a sale of 120,000 copies was quickly achieved. Gratifying as was this result, the circulation of the booklet was none the less small in relation to the number of households which, according to Sir John Orr, must be living on or below the nutritional borderline. Accordingly, an attempt has now been made, in *The Doctors' Cookery Book*, to make a more direct appeal to the working-class housewife. The new booklet has an attractive cover, and is printed in convenient size for the kitchen. The text has been rewritten and simplified, and the complete dietary carefully re-examined in the light of the expert report which is printed at page 1326 of this issue. Each of the dishes comprised in the three weeks' menus has been specially made up and photographed, and each day's menus now face a full page of illustrations. In addition, the price has been reduced, and every effort to secure publicity for the booklet is being made.

Copies are obtainable from any bookseller or newsagent, as well as from all W. H. Smith's bookstalls and co-operative societies. The help of medical practitioners in making the publication known will be welcomed. All inquiries should be addressed to the Secretary, British Medical Association, Tavistock Square, London, W.C.1.

THE NOCHT FESTSCHRIFT

Under the title *Festschrift Bernard Nocht* a volume has been published containing a foreword by Professor Mühlens and some 116 papers on various subjects relating to tropical medicine contributed by the friends and pupils of Professor Bernard Nocht in commemoration of his eightieth birthday. Professor Nocht, the founder and first director of the Institut für Schiffs- und Tropenhygiene at Hamburg, has a wide international reputation in tropical medicine. He is known especially for his researches on beriberi, malaria, and blackwater fever, but his name is perhaps most familiar to many as the first to introduce, under the name of Nocht's modification, the now universally used Romanowsky method of staining malaria parasites. At the time of the great cholera epidemic at Hamburg in 1892 Nocht was chosen to direct measures against this disease, and he later became increasingly concerned with the organization at Hamburg for the investigation and treatment of tropical disease in connexion with shipping and the German colonies. These activities led to the founding of the Hamburg Institute of Tropical Medicine and Nocht's appointment as its director, the post he still holds. The numerous papers in the *Festschrift*, arranged alphabetically according to authors, cover a wide field. Especially interesting in view of the occasion for its publication is the short account by Dr. Carmichael Low of the foundation of the different schools of tropical medicine which now form such important centres of medical research and teaching in this country and in Germany. The Liverpool School was officially opened in April, 1899, and the London School in October of the same year. This was followed by the opening in 1900 of the Hamburg Institute, an account of which, with its threefold functions of research, teaching, and provision of hospital treatment for tropical diseases, is given by Professor Sonnenschen. Since its foundation 2,661 postgraduate students have attended courses in tropical medicine, and associated with its many activities are such well-known names as Nocht, Fulleborn, Giemsa, Schaudinn, Mühlens, Ruge, Schilling, Martini, and others. Among contributions of a more directly scientific character are a number of papers dealing with malaria and related subjects. Notable among these are papers on various aspects of recent research upon the fate of the sporozoite and the significance of the endothelial stage in certain forms of bird malaria brought into prominence recently by the researches of Raffaele, James and Tate, and others. In this connexion Brumpt records his results obtained in the treatment of *P. gallinaceum* in fowls with quinine, plasmoquine, and atebrin. Administration during the incubation period, as with human malaria, does not prevent the infection developing. But once parasites have appeared in the blood such infection is readily controlled. The same phenomenon is observed in blood inoculated as in mosquito-infected birds, and the author inclines to the view that the drug is not effective during the incubation period because the infecting organism has by then not sufficiently developed in numbers to bring about the degree of immunity which on this view is necessary to the effective action of the drug. In relation to blackwater fever an important contribution is made by Fairley, who gives a very clear account of the conditions pertaining to intravascular haemolysis and the mode of formation and significance of the new blood pigment, pseudo-methaemoglobin, discovered by him. In connexion with the same syndrome Malamos has studied the relation of liver damage brought about by antimony and by carbon tetrachloride to haemoglobinuria in monkeys infected with *P. knowlesi*. Haemoglobinuria did not occur as a result of such treatment and the author considers therefore that the haemoglobinuria occurring in this infection in monkeys is distinct from blackwater fever in man. An important paper is one by Weise describing a new test for determining plasmoquine quantitatively in the urine. This test, which depends upon the formation of an azo-compound with *p*-anisidin, appears to be much more delicate than that dependent upon the blue colour given in the chloranyl test. We hear that for quantitative purposes the test has been found particularly valuable. Of subjects other than malaria some half-dozen papers relate to *Leishmania*, a description being given by Nattan-Larrier of schizogonous, metacyclic, and pseudocystic forms of *L. donovani*, whilst Napier discusses the method of testing drugs against kala-azar and records results obtained with a new antimonial drug (No. 561) which gives no local reaction injected intramuscularly and as regards effectiveness is in the same class with neostibosan. Other papers relate to a great variety of other subjects in tropical medicine impossible to specify in detail.

SPREAD OF YELLOW FEVER IN AFRICA

In the annual report of the Department of Public Health, Union of South Africa, for the year ended June 30, 1937, reference is made to the possibility of the spread of yellow fever from its endemic areas on the west coast to other parts of the continent, and, more especially, to the Union itself. The vulnerability of the port of Durban Bay is pointed out, a locality where it is impossible to depend upon an entire absence of susceptible mosquitos at any time of the year. The report forecasts that, if ever yellow fever were introduced into Durban, it would probably be a comparatively simple matter, with the efficient corporation health department available, to eliminate the disease in the town itself. If, however, it once succeeded in penetrating the surrounding country, the difficulties involved in checking its spread would be almost insuperable. The Department stresses the necessity for making the health

of South Africa one hundred per cent. safe, and maintains that it is not enough to rely on the efforts of neighbouring countries. With this end in view extensive experiments in methods of fumigation of aircraft were carried out under the auspices of the Department, and improved apparatus was successfully devised. Proposals have been submitted to make every aeroplane self-contained in the matter of defence against insects. With regard to the seaplane service the procedure on arrival at Durban is to fumigate the flying boat and its contents at the moorings. Passengers then proceed to the quarantine float, moored close by in a position safe from shore mosquitos. Here the health, immigration, and Customs formalities are carried out. The quarantine float functions both as an examining office and as a small isolation hospital unit. Should it be necessary to detain passengers, it is a simple matter to have any special hospital equipment required brought from the shore, and, by towing the float to a selected berth in the bay away from the air base and from ships' moorings, to secure complete isolation from man, mosquitos, and shipping.

BRITISH HOSPITALS IN CHINA

We publish to-day at page 1339 an influentially signed letter addressed to members of the medical profession on behalf of the Lord Mayor's Fund for the Relief of Distress in China. This plea for sympathy and active co-operation in the relief of suffering is reinforced by the honorary secretary and treasurer of the Fund, Dr. H. Gordon Thompson. Goods in kind, or money to buy drugs, dressings, or instruments, will be welcome. Without an ample supply of medical stores the hospital work for wounded, both civilian and military, cannot go on. Everywhere people are asking: "What can we do about China?" There is one thing that can be done, and is being done, for the Chinese in their hour of desperate need. Whatever the outcome of the war, China will not forget that British men and women did their best to alleviate her sufferings at the risk, and even at the cost, of their lives. Our medical colleagues must be supported in this gallant work.

DAWSON WILLIAMS MEMORIAL

The Dawson Williams Memorial Fund was established by voluntary subscription in 1928 in commemoration of the late Editor of the *British Medical Journal*. Its object is the award of a prize every two years, or at longer intervals, in recognition of work done in connexion with paediatrics. The Fund is administered by the following Trustees: the Presidents (for the time being) of the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Royal Society of Medicine, and the Section for Disease in Children of the Royal Society of Medicine, and the Editor of the *British Medical Journal*. The fifth award of the prize (which consists of a certificate and a cheque for 50 guineas) is due to be made in 1938, and the Trustees have chosen as the recipient Professor Leonard Parsons, M.D., F.R.C.P., of Birmingham, for his researches into diseases of children. With the consent of the Council of the British Medical Association the prize will be presented by the President of the Association on the occasion of his Presidential Address at Plymouth on Tuesday, July 19. Professor Parsons will give a lecture on the subject of the prize entitled "Some Nutritional Problems of Childhood" before the Section of Diseases of Children at the Plymouth Annual Meeting on Thursday, July 21.

HORSLEY MEMORIAL LECTURE

The Victor Horsley Memorial Fund, which was raised in 1920 to commemorate the services of Sir Victor Horsley to Science and the Empire, is devoted to the giving of a lecture triennially in London. By invitation of the Trustees (the Presidents for the time being of the Royal Society, the Royal College of Surgeons of England, and the British Medical Association, the senior physician to the National Hospital for the Paralysed and Epileptic, Queen Square, the senior surgeon to University College Hospital, and Mr. Stanley G. Robinson, son-in-law of Sir Victor Horsley) the sixth Victor Horsley Memorial Lecture will be delivered by Dr. Gordon Holmes, F.R.S., physician to the National Hospital and to Charing Cross Hospital, on Tuesday, July 12, at 5 p.m., in the lecture theatre of University College Hospital Medical School, Gower Street, W.C. The title of the lecture is: "The Cerebral Integration of the Ocular Movements," and the chair will be taken by Sir Cuthbert Wallace, Bt., P.R.C.S. Admission is free on presentation of a visiting card, and tea will be served in the library of the Medical School at 4.30.

BIRTHDAY HONOURS

The full list of medical honours conferred on June 9, the official day for celebrating His Majesty's birthday, will be found at page 1329 this week. Knighthoods are to be conferred on four members of the profession. Mr. William Girling Ball, surgeon and Dean of the Medical College, St. Bartholomew's Hospital, has done great work for Bart's, more particularly in securing the Charterhouse buildings for the College; last year he was appointed Dean of the Faculty of Medicine of the University of London. Dr. Henry Howarth Bashford, Chief Medical Officer, General Post Office, is well known to the medical profession and the public as a writer of essays and stories. Dr. William John Handfield Haslett, a past-chairman of the South Middlesex Division of the British Medical Association, receives his honour for political and public services in the Spelthorne Division of Middlesex. Mr. Robert Blakeway Wade is President of the Medical Board, State of New South Wales, and was elected President of the Royal Australasian College of Surgeons in 1935. He has been a leader in the work of the New South Wales Branch of the British Medical Association, of which he was President twelve years ago, and holds many important positions in Sydney.

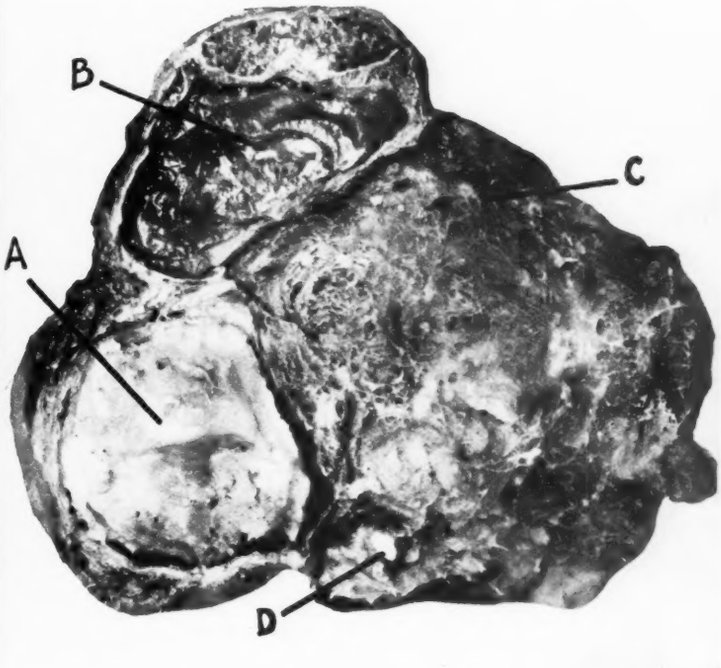
F. C. PYBUS AND E. W. MILLER: HEREDITARY BONE TUMOURS IN MICE

FIG. 1.—Radiograph of mouse 2773, showing osteogenic sarcomata of both tibiae and one lumbar vertebra; also large bony metastases in liver.

FIG. 2.—Longitudinal section of femur from mouse 2121: osteogenic sarcoma with some normal marrow still remaining. Haematoxylin-eosin: Ilford green filter (Micro 3). Obj. 2/3"; eyepiece × 5.

FIG. 3.—Mouse 3155. Transverse section of humerus, showing osteogenic sarcoma within shaft, surrounded by osteogenic and spindle-celled sarcoma, rapidly growing and infiltrating muscle. Van Gieson: Ilford blue and yellow filters (Micro 2 and 4). Obj. 1"; eyepiece × 5.

K. L. JAMES: RUPTURE OF OVARIAN DERMOID

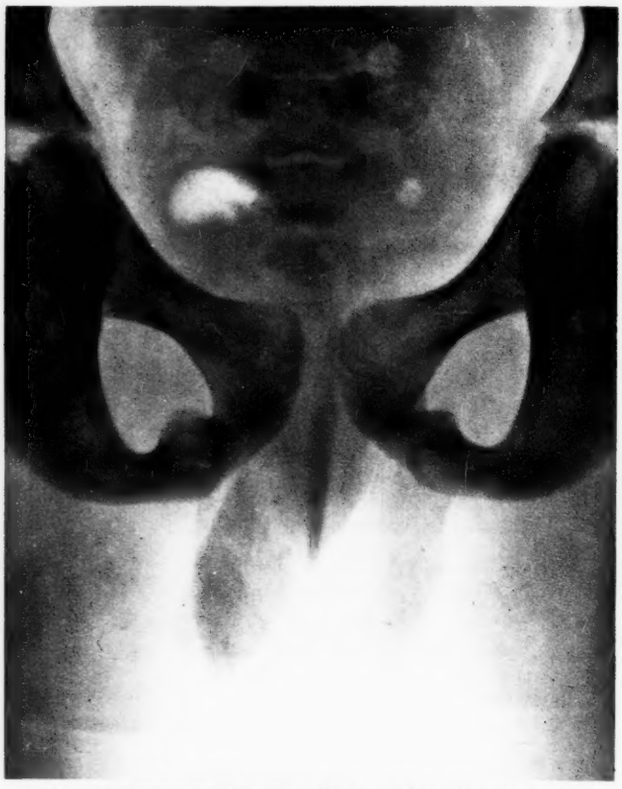


Photograph of the tumour in section. Note fatty sebaceous material (A); green jelly-like secretion (B); matted hair (C); and a tooth (D).

RONALD REID: A CASE OF ABDOMINAL PREGNANCY

The foetus.

GEORGE D. F. McFADDEN: ISCHIO-PUBIC OSTEOCHONDRITIS



Radiograph showing swelling and rarefaction at the ischio-pubic junction typical of osteochondritis.

J. P. HASTINGS: FRAGMENT OF NEEDLE IN FOOT

FIG. 1.—Radiograph showing a fragment of needle lying in the soft tissues below the head of the os calcis.

FIG. 2.—Radiograph showing the position of the foreign body in relation to the guide.

T. H. S. TIZZARD: KERATOPLASTY

FIG. 1.—Left eye before operation

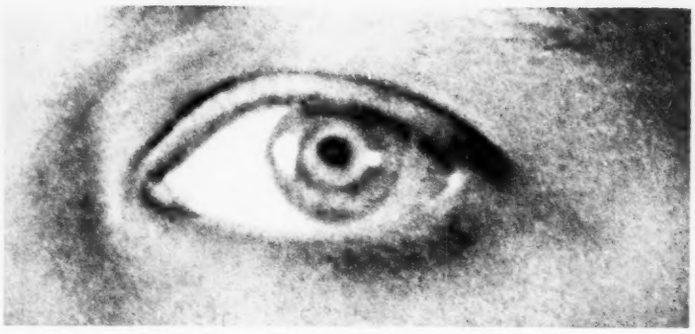


FIG. 2.—Left eye five months after operation.

E. MONTUSCHI: CLUBBING OF FINGERS AND TOES ASSOCIATED WITH A CONGENITAL LUNG CYST

Bronchogram of right lung.

J. L. RYCE: SUPERIOR PULMONARY SULCUS TUMOUR

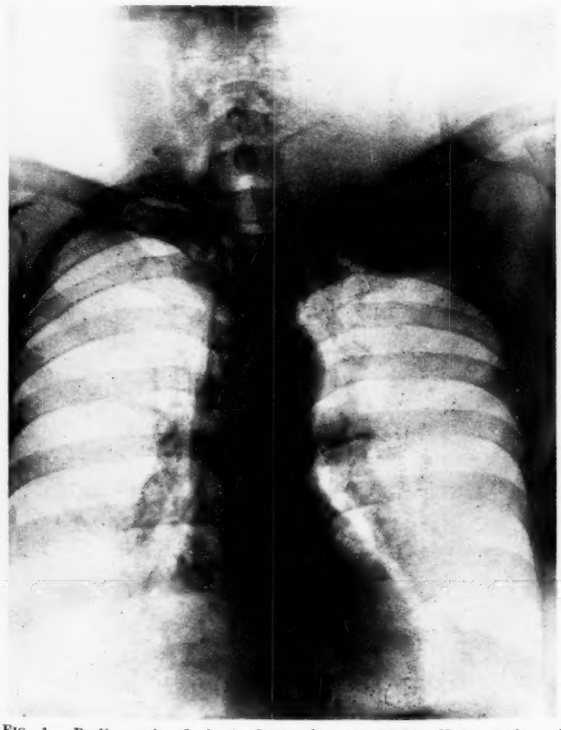


FIG. 1.—Radiograph of chest, September 15, 1937. Note erosion of seventh cervical vertebra and disappearance of first and part of second left ribs.

FIG. 2.—Section of tumour.

FIG. 1.—The prosthesis with clip.

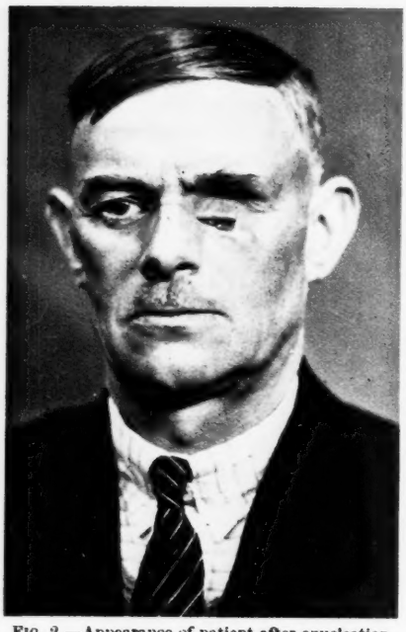


FIG. 2.—Appearance of patient after enucleation for epithelioma of the left lower lid.

FIG. 3.—Same patient as in Fig. 2 with the new prosthesis in position.

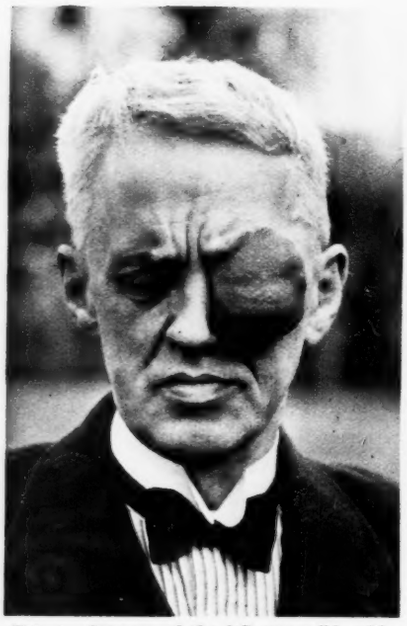


FIG. 4.—Sarcoma of the left upper lid, with avulsion of the left eye.

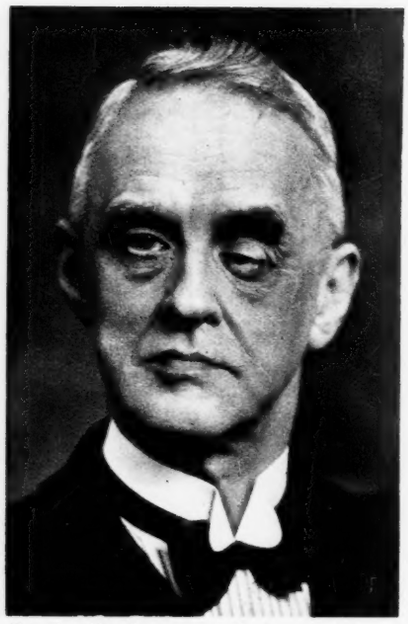


FIG. 5.—Showing same patient as in Fig. 4 fitted with a Snellen reform eye.

FIG. 6.—Showing same patient as in Figs. 4 and 5 fitted with the new prosthesis.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

QUINSY AND RETROPHARYNGEAL ABSCESS

BY

R. SCOTT STEVENSON, M.D., F.R.C.S.Ed.

The term "quinsy" had in the past a much less restricted application than it has to-day. To mediaeval surgeons cynanche meant any kind of a sore throat—including what appears to have been diphtheria—and even Morell Mackenzie (1880) used quinsy as a synonym for acute tonsillitis. To-day, however, we take it that a quinsy is a peritonsillar abscess—suppuration in the tissues of the soft palate outside the capsule of the tonsil. It does not originate in these tissues, but results from infection of the crypts of the intratonsillar fossa. The fossa, which is often inaccurately named, is confused with the supratonsillar fossa or sinus, above the tonsil and between the pillars of the fauces: it has been called by some authorities the tonsillar recess, superior tonsillar fossa, or crypta magna, and is situated in the upper pole of the tonsil, going right down to the capsule (see Fig. 1). It becomes

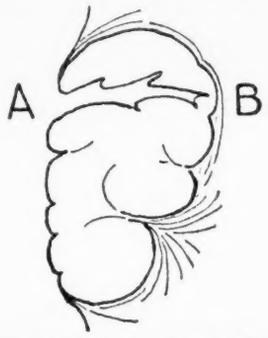


FIG. 1.—Diagram of tonsil: A, intratonsillar fossa; B, site of development of peritonsillar abscess.

infected usually after an acute tonsillitis, though this may be transient and the infection may appear to be a primary one in the fossa itself. The mesial end of the fossa is blocked up by the process of inflammation. An abscess forms and bursts through the thin capsule of the tonsil at the deepest part of the fossa. It then spreads into the areolar space between the capsule and the superior constrictor muscle. Sometimes the abscess does not burst through the capsule and a true tonsillar abscess is formed, but this is comparatively uncommon and the symptoms are much less severe than those of a peritonsillar abscess. A one-sided swelling of the tonsil should always be carefully examined and palpated; a tonsillar abscess has been known to be confused with a sarcoma and a mixed palatine tumour.

Symptoms

The condition is most common in young adults and is relatively rare in children. The onset is gradual, though it has been preceded by acute tonsillitis. The temperature is rarely above 100° F.; in an acute tonsillitis the temperature may go up to 103° F. or more. Pain increases progressively until it becomes almost unbearable. The patient feels extremely ill and unable to swallow, sometimes almost choking, with saliva dribbling from the mouth—a characteristic sign. The pain may radiate up to the ear and down to the neck; lateral movements of the head make the pain worse, and the patient may hardly be able to open his mouth for an examination of the throat.

He commonly has an anxious expression, and his breathing may be interfered with. There is a lot of thick, viscid secretion in the throat, which the patient finds difficulty in removing. One side only is affected as a rule. The soft palate and uvula, as well as the pharyngeal mucous membrane, are congested and swollen, and the tonsil is pushed downwards and backwards. The glands of the affected side of the neck are enlarged and tender. Pus forms about the third or fourth day of the illness, which lasts from about five to fourteen days when allowed to run its course. Actually it never should be allowed to run its course. The complications of this condition may be serious and even fatal, but immediate relief follows evacuation of the pus. Many surgeons are inclined to wait for the abscess to be definitely formed, but it does good and not harm to open a quinsy early rather than late, even if only blood and not pus flows from the incision.

Opening the Abscess

Opening the abscess is not always as easy as it may sound. A gag may have to be used to keep the patient's mouth open, the throat is very swollen, and the tonsil is displaced backwards. The classical site of the incision is at the junction of a horizontal line drawn across the base of the uvula and a vertical line drawn along the anterior pillar of the fauces (see Fig. 2). If the abscess is a large

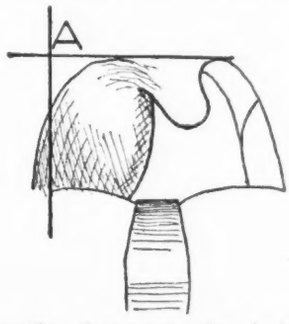


FIG. 2.—Peritonsillar abscess: A, site of classical incision.

one an incision made at this point will usually evacuate it, but it is not uncommon to fail to open the abscess with this technique, even after several attempts. In most cases this is due to failure to take into account the fact that the tonsil often extends forwards beneath the anterior pillar of the fauces, so that the incision penetrates the substance of the tonsil itself. In my opinion it is much better to make the incision through the intratonsillar fossa, where the abscess has originated, and to do so with blunt sinus forceps rather than with a scalpel or bistoury or other sharp instrument.

TECHNIQUE OF INCISION

The patient should be propped well up in bed, his head being steadied by an assistant. A good light is necessary and is best provided by a forehead light, which leaves both the operator's hands free. (A very efficient one, with a battery that can be put in the pocket, can be bought for 7s. 6d.) The light from an electric torch in the hands of an inexperienced assistant is apt to be unsteady and misdirected. The patient, if he can, may suck a benzocaine lozenge for ten minutes before the incision is made, or the throat may be sprayed with a small amount of 10 per cent. cocaine hydrochloride solution, but no local anaesthetic has much effect in quinsy.

The patient's tongue is depressed with a spatula held in the left hand. A pair of sinus forceps held in the right hand are pushed sharply backwards and upwards under the base of the uvula into the intratonsillar fossa if it can be seen, or at least into the upper part of the posterior pillar of the fauces, for a distance of an inch or more, until the pus is found (see Fig. 3). The sinus forceps are then opened widely to allow

FIG. 3.—Method of opening peritonsillar abscess through the intratonsillar fossa by means of sinus forceps.

of its evacuation. The forceps are quickly withdrawn, the patient's head is bent well forwards to allow the pus to run out of his mouth, and he is then given a warm mouth-wash of bicarbonate of soda solution, glycerin of thymol, or the like.

Tonsillectomy

Sometimes it may be necessary to open a peritonsillar abscess more than once, and if the abscess fills again after a second incision it will be well to consider whether the tonsil should not be removed. There has been a good deal of controversy on this subject of recent years, though as a matter of fact the problem is by no means a new one. Chassaignac, as early as 1859, said that he would not hesitate to remove the tonsil in a case of "tonsil suppuration." It has been suggested by Canuyt and others (1933) that general anaesthesia for this purpose is dangerous on account of the possibility of subsequent pulmonary infection from pus aspirated into the lung, and also that the operation is dangerous because of the fresh field opened up for infection.

Many American, French, German, and other authorities —along with a few in this country—have put their experience of tonsillectomy for peritonsillar abscess on record. With ordinary precautions there seems no reason to believe that pus is likely to be inhaled by the patient, or that the wound made by the tonsillectomy is liable to be any more dangerous than the usual incision made through the soft palate. However, in the vast majority of cases the question will not arise, especially when the abscess is opened in the manner described above. I have personally removed the tonsil for peritonsillar abscess on six occasions only: twice under local anaesthesia, 2 per cent. novocain being injected after spraying with 10 per cent. cocaine, and four times under general anaesthesia. In each case the abscess had filled up again after it had been opened, apparently thoroughly, on two or more occasions. In one instance the abscess was found to be situated at the lower and not the upper pole of the tonsil.

Complications

The complications of peritonsillar abscess, such as oedema of the glottis and haemorrhage, are rare but alarming. There is one type of abscess, fortunately atypical, in which the pus burrows laterally, bursts through the superior constrictor muscle, and becomes localized in the pharyngo-maxillary space. Such an abscess is difficult of approach, and the pus may burrow still further downwards and enter the mediastinum. The great vessels of the neck in such a case are close to the abscess cavity and thrombophlebitis may develop in them. In other cases the abscess may ulcerate one of the large arteries in the submaxillary region, and it has been necessary on occasion to ligate the external carotid artery. An abscess left to mature has been known to give rise to cavernous sinus thrombosis. Such complications, however, should not arise if the importance of early and thorough evacuation of the abscess is realized.

Retropharyngeal Abscess

Retropharyngeal abscess is of two types: the chronic, which is of tuberculous origin, usually secondary to tuberculous disease of the cervical vertebrae, and the acute, due to suppuration in the lymphatic glands (the glands of Gillette) situated behind the mucous membrane of the posterior pharyngeal wall. Though present in infancy, these glands gradually disappear as the child grows older, and are seldom present after the age of 2 years. They drain the nasopharynx and pharynx, and their efferent lymphatic vessels go to the upper group of deep cervical glands in the posterior triangle of the neck and beneath the sternomastoid muscle. There are two symmetrical pairs of glands, lying on each side of the vertebral column, so that when they become inflamed, from infection of the nose or throat, the process begins by being one-sided, but it gradually develops in the middle line because of the laxity of the submucous tissue in this region.

Acute retropharyngeal abscess is comparatively rare, but it has been said that probably no acute illness of childhood is more often overlooked. It occurs always in young children and should especially be kept in mind when an infant under the age of 12 months, after an ordinary cold with the usual symptoms of fever and nasal obstruction, shows signs of difficulty in swallowing and in breathing. Dysphagia accompanied by dyspnoea is very characteristic of retropharyngeal abscess. Usually there will be also the signs and symptoms associated with any serious illness in infants, such as high fever, often vomiting, and sometimes convulsions. The infant will try to feed, but chokes, coughs, and cannot drink its milk; it will then put its head back and cry. The dysphagia is caused by the mechanical obstruction due to the swollen pharynx and soon brings about a rapid loss of weight. Dyspnoea is usually noticed later and is also mechanical in origin, the progressive development of the abscess blocking the respiratory tract. The dyspnoea is sometimes spasmodic, and sometimes there is a change in the child's voice.

The condition is often mistaken for some other ailment, such as bronchitis, a foreign body in the larynx or lung, tonsillitis, peritonsillar abscess, oedema of the glottis, diphtheria, or even meningitis. The diagnosis is made by remembering that every sick child should always have its throat examined in a good light. The tongue should be held down by a spatula and the pharynx should be carefully palpated by the forefinger. In retropharyngeal abscess there is a red swelling of the back of the throat, sometimes rather hidden by the uvula; less often the swelling is lower down in the hypopharynx. It feels resistant and rather elastic to the touch; in the later stages fluctuation may be detected.

If the abscess is not opened the outlook is serious. Death may result from oedema of the glottis, asphyxia, or heart failure from pressure on the vagus, and if the abscess bursts spontaneously a septic pneumonia will probably follow. Once the diagnosis is made the abscess should be opened, without waiting for fluctuation.

The infant is wrapped up in a blanket or a towel and laid flat on its back, with a small sandbag or a rolled towel under its shoulders; its limbs are held by an assistant, for no anaesthetic is permissible—in any case the pain is slight and momentary. A spatula is usually all that is necessary to keep the tongue back and a gag should not be needed. With the aid of a forehead light, a pair of sinus forceps is plunged into the most prominent part of the swelling (see Fig. 4) and

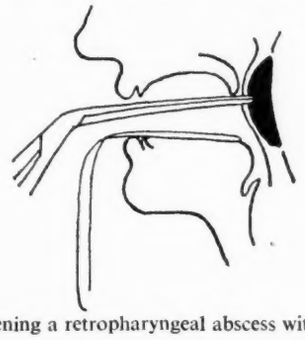


FIG. 4.—Opening a retropharyngeal abscess with sinus forceps.

opened widely to allow the pus, which may be profuse in amount, to pour out. The infant is at once held up by its legs, so that the pus cannot get down to the lungs. The drainage is usually satisfactory, but convalescence is slow because the child is generally in a poor state of health before the abscess is opened.

If the abscess points towards the neck, opening through an external incision may have to be considered; but it should not be looked upon as the incision of choice, as used to be the case, for the dangers of opening the abscess by way of the mouth were formerly exaggerated. With ordinary precautions, lung complications should not follow the opening of a retropharyngeal abscess by the method described.

REFERENCES

Barnes, H. A. (1923). *The Tonsils*, St. Louis.
Canuyt, G. (1933). *Presse méd.*, **38**, 369.
Chassaignac, E. (1859). *Traité de la Suppuration et du Drainage*.
Mackenzie, Morell (1880). *Diseases of the Throat and Nose*, 1.

VOLUNTARY HOSPITALS EMERGENCY BED SERVICE

In our issue of June 4 (p. 1221) we published a short account of the scheme and the objects behind it. The service will come into operation on Tuesday, June 21, at 8 a.m., and it is now possible to give full details, so that practitioners may know how it is worked and how to make use of it. The service will be open from 8 a.m. to 10 p.m. seven days a week in the early stages, and will subsequently be extended to cover the twenty-four hours.

Since it is not possible to estimate accurately the number of calls which will be received, the letters informing doctors that the service is at their disposal, and giving the telephone number, will be sent out in instalments in alphabetical order, so that if necessary the issue can be stopped if it is found that more calls are coming in than the staff can deal with. The issue will be resumed so soon as the staff has been sufficiently increased. In actual fact a larger staff has been appointed than is expected to be necessary to work the day service, so that it is not likely that the sending out of letters will be delayed.

Procedure for the Doctor

When a doctor desires to obtain admission to hospital for an emergency or acute case he can ring up the service, whereupon he will be asked to give his name and telephone number, the patient's name, address, sex, and age, and his diagnosis. He should then say to which hospital he wishes to have the patient admitted. With this information the operator will be able to inform him whether or not a suitable bed has been reported free at that hospital. If no bed is free there, then another hospital can be considered forthwith. When a bed is reported free the operator will obtain confirmation from the hospital in question, for it may have been filled since the last report. On receiving confirmation she will book the bed and inform the doctor. There are two points in the course of this process at which it is suggested that the doctor could help the operator and himself: first, by saying at the end of his diagnosis whether it is a medical, surgical, ophthalmic, laryngological, orthopaedic, or other case; and, secondly, by giving a choice of hospitals so that if the bed reported free at one has been filled she can ring the other forthwith without further reference to him.

How Hospital Accommodation is Indicated

It is perhaps well to explain how the list of free beds of all the hospitals is to be kept before the operators. This will be done by means of a large indicator board, on which will be written the names of the hundred co-operating hospitals; against these names tickets will be hung representing the free beds. The tickets will be made in different shapes to indicate the sex—for example, all male tickets will be square, the female ones round, and the children's triangular. The types of bed—whether medical, surgical, etc.—will be indicated by colours. Thus, once the classification of the case is clear the operator will be able to find accommodation almost at a glance.

The operators have not had medical training, but a number of them have worked in hospitals or been doctors' secretaries, and thus have acquired a certain familiarity with medical terms; it is expected, therefore, that they will all soon pick these up. At first, however, and always in the case of obscure or rare cases, it will be a great help if doctors provide a general classification as well as the diagnosis.

As regards the beds indicated as free, it would obviously be ideal if hospitals were to report to the service every time a case was admitted or discharged, thus enabling an accurate up-to-the-minute record to be always available. But this would involve such an expenditure of time and money in telephone calls that it would defeat the object of the service. So a compromise has been struck and, to begin with, the record will be obtained twice daily, at times that have been arranged to suit the individual hospitals. Generally speaking, the first record will be taken between 8 and 10.30 a.m. and the second between 4 and 7 p.m. Only by practical experience can it be decided whether more frequent records are necessary or desirable.

The Service as a Working Experiment

It will be gathered from the foregoing that at first the whole service must be partly in the nature of a working experiment. No service on a comparable scale exists anywhere else, so that the details have had to be worked out to suit the conditions, and all are open to revision in the light of experience. There is no reason why the scheme should not run smoothly after a fairly short period, provided always that the doctors and hospitals alike give it their friendly support.

In conclusion, it is perhaps worth while pointing out that for any given case there are probably some twenty-five hospitals to which it could reasonably be sent, and a survey of all these can be made in a few minutes. For instance, a gynaecological patient in North London could go either to one of the North London general hospitals or, failing that, to one of the Central London general hospitals; or the doctor might prefer to send her to a hospital specializing in diseases of women. It thus seems unlikely that in normal times it will not be possible to find a bed in any of the hospitals in these three groups. It is to be hoped, therefore, that "one call, one bed" will prove an attainable ideal.

THE DOCTORS' COOKERY BOOK, 1938

AN ASSESSMENT OF THE NUTRITIONAL VALUE OF THE DIETS

Recent progress in the assessment of the vitamin and mineral content of foodstuffs, and the acceptance by leading authorities on nutrition of certain standards for individual daily intake of these important constituents of protective foods, made it desirable to re-examine the nutritional value of the family dietary (No. 16 of the B.M.A. Nutrition Report of 1933) which was used as the basis in the booklet entitled *Family Meals and Catering* before deciding on the publication of a new edition.

In response to a request from the British Medical Association the Ministry of Health indicated that information as to accepted standards of individual requirements for minerals and vitamins, and of values for the content of various foodstuffs in respect of these constituents, could be found in the publications listed at the end of this report. The present assessment of the adequacy or otherwise of the mineral and vitamin content of the three-weeks dietaries for a family of man, wife, and three children aged 6 to 14 years was based on information contained in those publications, and can therefore be taken as an assessment of the nutritional value of the diets in the light of most recent scientific knowledge and opinion.

Minerals

(*a*) STANDARDS

Sherman (1937) publishes a table of the mineral and vitamin contents of a diet "to furnish not only the minimum requirements of the body but an ample margin of safety as well." The original table is from Stiebeling (1933); this table is also used by Orr as his standard in *Food, Health and Income* (Table I).

TABLE I.—*Quantities of Nutrients for Individuals per Day; "Minimum Requirements with Ample Margin of Safety."* (*Stiebeling*, 1933; *Sherman*, 1937.)

Individuals by Age, Sex, and Activity Groups	Energy Value (Calories)	Dietary Allowance in			
		Protein (Grammes)	Calcium (Grammes)	Phosphorus (Grammes)	Iron (Grammes)
Child under 4 years	1,200	45	1.00	1.00	0.006-0.009
Boy 4-6; girl 4-7 years	1,500	55	1.00	1.00	0.008-0.011
Boy 7-8; girl 8-10 years	2,100	65	1.00	1.00	0.011-0.015
Boy 9-10; girl 11-13 years	2,400	75	1.00	1.20	0.012-0.015
Moderately active woman; boy 11-12 years; girl over 13 years	2,500	75	1.00	1.20	0.013-0.015
Very active woman; active boy 13-15 years	3,000	75	0.88	1.32	0.015
Active boy over 15 years	3,000-4,000	75	0.88	1.32	0.015
Moderately active man	3,000	67	0.68	1.32	0.015
Very active man	4,500	67	0.68	1.32	0.015

On examining the table it will be noticed that there is some apparent discrepancy in the "standard" for calcium, the *moderately* active woman having a larger allowance of calcium than the *very* active woman, but a smaller allowance of phosphorus. On inquiry into this point it was ascertained that the diet from which this table was drawn up was not intended to set a standard but to indicate a possible adequate diet at a *minimum* cost, and that primarily the moderately active woman was classed with the boy 11 to 12 (or girl over 13) on the basis of calorie requirement. Attention was also drawn to the fact that 0.88 or 1.00 gramme of calcium is above the present suggested standard of 0.75 gramme daily for an adult female.

On the basis of this table, with the new figure of 0.75 gramme Ca, the B.M.A. family of diet No. 16 would have the following calorie, protein, and mineral requirements (Table II).

TABLE II

	Calories	Grammes of			
		Protein	Calcium	Phosphorus	Iron
Man	3,000 (up to 4,500)	67	0.68	1.32	0.015
Wife	2,500 (up to 3,000)	75	0.75 (up to 1.00)	1.20 (1.32)	0.014 (0.015)
Child 6-8	1,500	55	1.00	1.00	0.010
„ 10-12	2,500	75	1.00	1.10	0.012
„ 12-14	2,500	75	1.00	1.20	0.014
Daily total	12,000 (up to 14,000)	347	4.43 (up to 4.68)	5.82 (up to 5.94)	0.065 (up to 0.066)
Weekly total	84,000 (up to 98,000)	2,429	31.01 (up to 32.76)	40.74 (up to 41.58)	0.455 (up to 0.462)

As the *sex* of the children in the B.M.A. family was not stated, and as in Stiebeling's table boys received a higher allowance of some constituents than girls of the same age, the difference has been split to give an average—that is, child 10 to 12, 1.10 grammes P. The *Family Meals and Catering* variations being of *weekly* rations, the Stiebeling *daily* allowances have been brought up to *weekly* ones, to admit of direct comparison.

(*b*) CALCULATION OF MINERALS (CALCIUM, PHOSPHORUS, AND IRON) IN THE B.M.A. VARIATIONS OF DIET NO. 16

The publications quoted by the Ministry of Health give a wide choice for the assessment of the mineral content of foodstuffs, and include all those items listed in *Family Meals and Catering*. The data of mineral content from these sources, together with the appropriate McCance factor to allow for losses through cooking, waste, etc., of meat or fish, fruit and vegetables, have been used in the present assessment of minerals in the three-weeks variations of diet No. 16. Hence the resulting mineral content for each week will be practically the *net* total. The three-weeks variations, when worked out from the analyses chosen, give the following results (Table III).

TABLE III

	Calories	Grammes of			
		Protein	Calcium	Phosphorus	Iron
Week I	98,874	3,003	30.07975	47.77567	0.50398
„ II	99,377	2,836	28.72247	46.25129	0.48772
„ III	98,593	2,753	25.18224	42.77382	0.52066
	296,844	8,592	83.98446	136.80078	1.51236
Average weekly	98,948	2,864	27.99482	45.60026	0.50412

On comparing these results with the weekly allowances of Table II it will be seen that the *average* content of the three-weeks diet is well up to the Stiebeling diet, which was calculated to "furnish an ample margin of safety" in everything but the *calcium* content. Family No. 16 contains three children of school age. If these three children drink a third of a pint of milk each at school (five days weekly, at 1½d. per day = 7½d.), and the food value of the five pints of milk is added to the weekly average content of the diet, while the monetary equivalent in amount of *bread* is deducted (4¼ lb. of bread at 3½d. per 2 lb. (cost in 1933) = 7½d.), the result is as follows:

	Calories	Grammes of			
		Protein	Calcium	Phosphorus	Iron
Less Bread	−4,407	−139.0	−0.5976	−1.8700	−0.01542
More Milk	+1,890	+ 93.5	+3.4100	+2.6400	+0.00682
	−2,517	− 45.5	+2.8124	+0.7700	−0.00860

These figures added to or deducted from the weekly averages of Table III will not materially reduce the amount of the other constituents, but will bring up calcium to the required level.

Calories	Grammes of			
	Protein	Calcium	Phosphorus	Iron
98,948	2,864	27.9948	45.6003	0.50412
−2,517	−46	+2.8124	+0.7700	−0.00860
96,431	2,818	30.8072	46.3703	0.49552

Vitamins

(*a*) STANDARDS

Only very tentative suggestions for the assessment of standards in vitamins or of the quantity of vitamins in foodstuffs (evaluated as "units") can be had at the present moment. Stiebeling (1933) gives the following quantities of vitamin A and vitamin C yielded by the adequate diet at minimum cost (Table IV).

TABLE IV.—*Quantities of Nutrients for Individuals per Day "to furnish not only the Minimum Requirements of the Body but an Ample Margin of Safety as well." (Stiebeling, 1933; Sherman, 1937.)*

Individuals by Age, Sex, and Activity Groups	Vitamin A (Sherman Units)	Vitamin C (Sherman Units)
Child under 4 years	3,000	75
Boy 4–6; girl 4–7 years	3,000	80
„ 7–8; „ 8–10 „	3,500	85
„ 9–10; „ 11–13 „	3,500	90
Moderately active woman; boy 11–12 years; girl over 13 years	4,000	95
Very active woman; active boy 13–15 years	4,000	100
Active boy over 15 years	4,000	100
Moderately active man	4,000	100
Very active man	4,000	100

Daniel and Munsell (1937), on analysis of diets providing "at least the minimum daily requirements" for protein, calcium, phosphorus, iron, and calories, have also estimated the vitamins yielded by such diets, and the Bureau of Home Economics is using the results of this calculation as a "very tentative standard" for the various vitamins (Table V).

TABLE V

	Vitamin A	Vitamin B_1	Vitamin C	Vitamin D	Vitamin B_2
Per adult per day ..	6,000 Sherman Units	600 Sherman Units	150 Sherman Units	—	600 Sherman Units

For vitamin D they do not attempt to fix a standard.

(*b*) CALCULATIONS OF VITAMINS IN THE B.M.A. VARIATIONS OF DIET NO. 16

From tables given by Daniel and Munsell (1937) it has been possible to make a fairly accurate estimation in Sherman units for vitamins A, B_1, C, and B_2, and in international units for vitamin D. In the case of various meats and eggs the vitamins in Daniel and Munsell's tables are estimated separately for lean and fat, white and yolk. Where this is the case estimations for the vitamins yielded have been adjusted to the proportions of fat and lean, etc., given by Plimmer (1921) for the foodstuffs concerned. In the menu for Week III 1½ lb. rabbit is used. It has not been possible to trace any analysis of vitamins in rabbit, otherwise the lists are complete. In the case of B_1 the vitamin content of a few foodstuffs is given in *international* units only, and as the conversion figure into Sherman units is not standardized no attempt has been made to convert such units. Vitamin B_1 will therefore be present in the raw foodstuffs in *not smaller* quantities than those stated as the result of the calculations. But it must be emphasized that such calculations may not be accepted as valid: they are, however, all that is at present available from published data.

From the Stiebeling table the following requirements for family No. 16 (weekly man-value 28.91) in vitamins A and C can be constructed (Table VI).

TABLE VI

	Vitamin A (Sherman Units)	Vitamin C (Sherman Units)
Man	4,000	100
Wife	4,000	95 ? 100 ?
Child 6–8	3,000	80
„ 10–12	3,500	85
„ 12–14	4,000	95
Daily total	18,500	455 ? 460 ?
Weekly total	129,500	3,185 ? 3,220 ?

The actual result of the calculations in the three-weeks variations is shown in Table VII.

TABLE VII

	Vitamin A Sherman Units	Vitamin B_1 Sherman Units	Vitamin C Sherman Units	Vitamin D International Units	Vitamin B_2 Sherman Units
Week I	138,042	7,161†	2,112	366	13,414
„ II	130,560	8,128†	2,275	366	11,856
„ III	108,551*	7,141†	2,505	595	15,683
	377,153*	22,430†	6,892	1,327	40,953
Average weekly ..	125,718*	7,477†	2,297	442	13,651
Average daily per man-value	13,046*	776†	238	46	1,417

* Rabbit not included.

† Vitamin in *international* units not included.

The weekly figure is to be compared with the weekly total of Table VI. The daily "per man-value" figure is to be compared with the figures of Table V. According to the Stiebeling standard vitamin C is low, but, according to Daniel and Munsell, requirements in all vitamins are well covered, without the readjustment proposed between bread and milk in the section on *minerals*, which would raise the amount of vitamin A by over 4,600 units weekly.

Costs

Questionaries were sent out to medical officers of health of various urban and rural districts in England and Wales, including those who co-operated in the original investigation into costs in 1933. The questionaries included all the foodstuffs listed in the three-weeks menus, and it was asked that maximum, medium, and minimum prices of shops or markets in working-class districts should be collected at the end of January or beginning of February on a Friday and Saturday. Full replies were received from the medical officers of health of seventeen widely distributed districts. If in any case a price appeared very different from that listed generally, inquiry was made again and the statement was thus checked. From some

centres more than one questionary was filled up to represent different shopping districts in the city or county. When this was done the average cost (both maximum and minimum) of each article was worked out for that city or county, so that each district might be represented once only in the total. Thus though thirty-five completed questionaries were returned, the districts represented number seventeen. As so many centres were unable to furnish a medium price, only the maximum and minimum prices were finally averaged out for each article listed. The cost of the articles in the quantity stated in the shopping list for each week was then worked out on the two scales, correct to the nearest farthing. The cost on the two scales is as follows:

TABLE VIII

	Cost in Pence	
	Minimum	Maximum
Week I	310.00	424.25
„ II	330.25	445.75
„ III	340.00	455.75
	980.25	1,325.75
Stores I	0.50	0.50
„ II	3.75	3.75
„ III	—	—
Total for 3 weeks	984.50	1,330.00
Average per week	328.1667	443.333
	27s. 4¼d.	36s. 11¼d.

The minimum price of 27s. 4¼d. may be compared with the figure 22s. 6½d. (cost in 1933), the percentage increase being 21.3. The mean of the two prices (27s. 4¼d., 36s. 11¼d.) would be 32s. 1¾d. It must be remembered that either scale of figures must be liable to considerable variation. The variation may be due to local, seasonal, or other factors.

General Conclusions

The object of the present investigation was to assess the three-weeks variations of diet No. 16 in the light of present knowledge.

In regard to energy value, proteins, fats, and carbohydrates, the diets conform to accepted standards. Of the minerals the requirements in phosphorus and iron are amply covered in each week, but having regard to the fact that the family includes three children the calcium content might be increased, as recommended in the original foreword to *Family Meals and Catering*—that is, that children of school age should take advantage of the school milk service. Calculations show that if this is done the requirement for calcium for growth is adequately met, according to present opinion.

In regard to the vitamins, it appears that the only deficiency is in respect of vitamin C, and this only according to one scale of adequacy (Stiebeling) and not to another (Daniel and Munsell). It may be thought desirable to increase the vitamin C content by purchasing, according to season, more citrus fruits, tomatoes, or green vegetables, and balancing their increased cost by an appropriate reduction in the money spent on meat. This would seem a reasonable modification in a family of this composition. It may be pointed out that in a family of the same man-value made up entirely of adults such modifications would not be necessary.

The present cost of the diets, purchased at the minimum prices, amounts to 27s. 4¼d., as against 22s. 6½d. in June, 1933. This figure is 21.3 per cent. above that of the cost at 1933 prices.

BIBLIOGRAPHY

Bridges, M. A. (1935). *Food and Beverage Analyses*, Philadelphia.
Daniel, E. P., and Munsell, H. E. (1937). U.S. Dept. Agric. Misc. Pub., No. 275, Washington, D.C.
McCance, R. A., and Shipp, H. L. (1933). Med. Res. Cncl. Sp. Rep. Ser. No. 187.
—— Widdowson, E. M., and Shackleton, L. R. B. (1936). Ibid., No. 213.
—— —— (1932). Ibid., No. 167.
Plimmer, R. H. (1921). *Analyses and Energy Value of Foods*, H.M.S.O., London.
Sherman, H. C. (1937). *Chemistry of Food and Nutrition*, 5th ed., p. 524, Macmillan Company, New York.
Stiebeling, H. K. (1933). U.S. Dept. Agric. Misc. Pub. No. 183, Washington, D.C.

INTERNATIONAL HOSPITAL ASSOCIATION

The meeting of the Council of Management of the International Hospital Association has been held recently in Frankfort-on-Main, when eleven countries were represented —namely, Canada, Czechoslovakia, Belgium, Eire, Germany, Great Britain, Holland, Hungary, Italy, Switzerland, and the United States of America.

Dr. René Sand occupied the chair, and his knowledge of German, French, and English made for smooth working. Dr. von Deschwanden was thanked in his absence for his fine services to the association, and was elected as honorary president. Dr. W. Alter, than whom no one has given more needed help, was secured in his office of honorary secretary, and Miss R. M. Murray as executive secretary. Mr. E. Heisch was appointed honorary treasurer. Much appreciation was evinced in the quarterly publication of the association, named *Nosokomeion*, of which Dr. Alter is the able editor. Dr. Malcolm T. MacEachern, associate director of the American College of Surgeons, Chicago, was elected president and will preside at the congress of the association to be held next year in Toronto, Canada, from September 19 to 23, 1939. It is hoped that there will be a large contingent from Great Britain and Eire, as well as from Continental countries, as the congress will be followed immediately by the Convention of the American Hospital Association.

The congress in 1941 will take place in Berlin, under the presidency of Dr. R. Zeitler of that city. Mr. W. McAdam Eccles, M.S., F.R.C.S., brought a unanimous invitation from the United Kingdom Council of the I.H.A. to hold the congress of 1943 in Great Britain, and this was accepted with acclamation. There are forty study committees at work, and their reports and resolutions will be presented to the congress in Toronto.

The International Hospital Association is increasing its number of national and individual members, and thus growing in influence the world over. Anyone interested is invited to communicate with the joint honorary secretaries, International Hospital Association, 12, Grosvenor Crescent, London, S.W.1.

F. Blumenthal and W. L. Sherman (*Amer. J. Syph. Gon.*, March, 1938) discuss the cutaneous manifestations of gonorrhoea. The metastatic manifestations include erythemata, urticaria, erythema nodosum-like lesions, purpura, bullae, and hyperkeratoses, the last being associated with conjunctivitis and arthritis. The skin affection is at the extremities, the arthritis multiple and accompanied by only slight pain and not usually followed by ankylosis. A case is reported in which joint pains and penile dyskeratoses developed and disappeared with the exacerbations and remissions of a gonococcal prostatitis. The skin lesions differed from psoriasis in the presence of plasma cells, the arthritis was not associated with bony changes, and it is suggested that the skin and joint conditions were allergic manifestations due to the breakdown of gonorrhoeal metastases. Gonococci are rarely found in the lesions, but there is always a positive blood complement-fixation test.

THE BIRTHDAY HONOURS

The Honours List, issued on the occasion of the celebration of His Majesty's birthday, included the names of the following members of the medical profession:

Knighthood

WILLIAM GIRLING BALL, F.R.C.S. Surgeon and Dean of the Medical College, St. Bartholomew's Hospital.

HENRY HOWARTH BASHFORD, M.D., M.R.C.P. Chief Medical Officer, General Post Office.

WILLIAM JOHN HANDFIELD HASLETT, M.R.C.S., L.R.C.P. For political and public services in the Spelthorne Division of Middlesex.

ROBERT BLAKEWAY WADE, M.D., F.R.A.C.S. President of the Medical Board, State of New South Wales.

C.B. (Military Division)

Major-General GEORGE ALFRED DUNCAN HARVEY, C.M.G. (late R.A.M.C.). Honorary Physician to the King, Deputy Director of Medical Services, Western Command, India.

C.M.G.

Colonel GEORGE WYKEHAM HERON, C.B.E., D.S.O., Colonial Medical Service. Director of Medical Services, Palestine.

C.I.E.

Lieutenant-Colonel NILKANTH SHRIRAM JATAR, D.S.O., I.M.S. Inspector-General of Prisons, Central Provinces and Berar.

Lieutenant-Colonel EDWARD HUMFREY VERE HODGE, M.D., F.R.C.P., I.M.S. Professor of Medicine, Medical College, Calcutta, and First Physician to the College Hospitals, Bengal.

C.B.E. (Military Division)

Colonel PHILIP HENRY MITCHINER, T.D., M.D., F.R.C.S. Honorary Surgeon to the King, Assistant Director of Medical Services, 1st Anti-Aircraft Division, Territorial Army.

C.B.E. (Civil Division)

JAMES FENTON, M.D., M.R.C.P., D.P.H. Medical Officer of Health, Royal Borough of Kensington.

Miss ELIZABETH HURDON, M.D. Lately Director, Medical Services and Research, the Marie Curie Hospital, Hampstead, and now a member of the Advisory Council of the Hospital.

AUGUSTUS LEO KENNY, M.B., Ch.B., F.R.A.C.S. For social welfare services in the State of Victoria.

O.B.E. (Military Division)

Surgeon Commander JOSEPH ARCHIBALD MAXWELL, M.B., B.Ch., F.R.C.S., R.N.

Major CHARLES BEVAN CAREW ANDERSON, M.B., F.R.C.S.Ed., R.A.M.C.

Wing Commander PHILIP CLERMONT LIVINGSTON, F.R.C.S.Ed., D.P.H., R.A.F.

O.B.E. (Civil Division)

WALTER HAWARD, M.B., B.S. Assistant Director of Medical Services, Ministry of Pensions.

ALEXANDER SHEARER, M.B., C.M. Medical Officer, Department of Health for Scotland.

Mrs. VERA BROWN, M.D., B.S. Director of Infant Welfare, Public Health Department, State of Victoria.

Miss ISABELLA YOUNGER ROSS, M.B., Ch.B. Honorary Secretary, Baby Health Centres Association, State of Victoria.

Lieutenant-Colonel AMBUJ NATH BOSE, M.B.E., M.D., F.R.C.P., I.M.S. Professor of Pathology, Prince of Wales' Medical College, Patna, Bihar.

Lieutenant-Colonel LLOYD KIRKWOOD LEDGER, M.R.C.S., L.R.C.P., I.M.S. Civil Surgeon, Peshawar, North-West Frontier Province.

Miss ISABELLA HARDIE CURR, M.B.E., L.R.C.P. and S.Ed. In charge of the McLeod Hospital for Women at Inuvil, near Jaffna, Ceylon.

Professor RUPERT MONTGOMERY GORDON, M.D., D.Sc., M.R.C.P. Director of Sir A. L. Jones Research Laboratory, Freetown, Sierra Leone.

ROBERT BEST JACKSON, M.D. Colonial Medical Service. Malariologist, Medical Department, Hong Kong.

ROBERT YELVERTON STONES, *M.C.*, M.D., M.R.C.P. Physician-in-Charge of the Church Missionary Society's Hospital at Namirembe, Uganda Protectorate.

M.B.E. (Military Division)

Assistant Surgeon (4th Class) ERNEST PERCIVAL DENTON, Indian Medical Department.

Captain JOHN PRIMROSE DOUGLAS, M.B., R.A.M.C.

M.B.E. (Civil Division)

Mrs. TERESA JADWIGA SUBRAMANIA IYER, B.S., M.R.C.S. Director, Maternity and Child Welfare Section of the United Provinces Branch of the Indian Red Cross Society.

Captain EPHRAIM BENJAMIN, M.B., B.S., D.P.H. Assistant Director of Public Health, Sind.

JOHN EMMANUEL REID HEPPOLETTE, M.R.C.S., L.R.C.P., M.C.O.G., Indian Medical Department. Clinical Assistant to the Professor of Midwifery, King Edward Medical College, Lahore, Punjab.

Lieutenant (Assistant Surgeon) RALPH HOLMES, Indian Medical Department. Quarantine Medical Officer, Bahrein, and Medical Officer-in-Charge, Victoria Memorial Hospital, Bahrein, Persian Gulf.

ERNEST JENNER WRIGHT, M.R.C.S., L.R.C.P. Senior Medical Officer, Sierra Leone.

Reports of Societies

SCIENTIFIC TREATMENT OF DELINQUENCY

The Institute for the Scientific Treatment of Delinquency held its annual general meeting at the British Industries House Club on May 26, Mr. NORMAN BIRKETT, K.C., presiding. Mr. Birkett said that he thought that the Institute must inevitably suffer from its name; it probably illustrated accurately the scope of the work, but it only appealed properly to the initiated. The moment the psychology of crime was mentioned in this country a strong reaction was aroused in the minds of ordinary people. As a working barrister he had been more and more impressed with the need for a scientific approach to the cause and prevention of crime and the treatment of offenders. The English habit of mind had been to treat the causes of crime in a rather haphazard way. It was high time that the problem was dealt with scientifically. One of the most valuable activities of the Institute was the work it did in conjunction with magistrates' courts and probation officers.

Dr. DENIS CARROLL agreed that the name of the Institute was absurd. No treatment was strictly scientific in psychology or in medicine. The Institute would, however, stick to its name, shortened for general use to "I.S.T.D." The relations of the Institute with the Home Office were closer than they had ever been. Some types of criminals were theoretically curable, but psychologists did not yet know how to cure them. The clinic needed one or two half-time research workers, for on the clinical side the best men were in private practice. One great difficulty about research in this kind of work was the storage of the inevitably bulky records. The study of delinquency on psychological lines had now reached a stage at which it could put forward suggestions as to definite lines of treatment.

The annual report showed a steady increase in the work, although dealing with the 167 new cases strained the Institute's resources. The waiting list had been satisfactorily reduced by the appointment of a medical registrar, and the assistance of a skilled social worker had been invaluable in finding and supervising accommodation for patients requiring in-patient conditions. Early in the year the Institute was asked to co-operate with the British Paramount News in a news reel on "Shoplifting." In January the Institute was officially recognized by the Child Guidance Council as a child guidance clinic.

Week-end Course

A week-end course of lectures for doctors on the causes and treatment of delinquency was held on May 28 and 29. Mr. T. H. MARSHALL, reader in sociology in the University of London, spoke on the sociological aspect, and dealt with the social causes of delinquency, the idea of responsibility, and the social functions of punishment. Dr. C. J. C. EARL opened a group discussion on "Intelligence—

subnormal and supernormal—as a factor in delinquency." He pointed out that the relation of intelligence to delinquency was indirect, and the intellectual factor had always to be considered in relation to the personality as a whole. Subnormal intelligence itself was a rare cause of crime. Dr. J. D. W. PEARCE gave two lectures on the psychopathology of delinquency, showing how delinquency was a reaction to negative feelings engendered by the frustration of fundamental urges, and how the delinquent gained compensatory satisfactions and escape from difficulty, usually without being aware of what he was doing. He also dealt with delinquency as a symptom of various psychoneuroses, psychoses, and metabolic disorders. On the Sunday Dr. DENIS CARROLL lectured on the medical treatment of delinquents. A general discussion took place on the topics raised in all the lectures.

PREGNANCY AND PARTURITION AFTER AMPUTATION OF THE CERVIX

A meeting of the North of England Obstetrical and Gynaecological Society was held in Leeds on April 29. Dr. J. W. A. HUNTER (Manchester) read a paper on the effect of amputation of the cervix on subsequent pregnancy and labour.

Dr. Hunter made a plea for a more conservative attitude to endocervicitis and cervical lacerations in view of the increasing adoption of extensive plastic procedures in women of child-bearing age in preference to pessary treatment. A study of the literature dealing with the dangerous sequelae of cervical amputation and repair led to the conclusion that these operations in women of child-bearing age might cause sterility, repeated abortion, premature labour, or obstructed labour. His interest indeed was first drawn to the subject by seeing a case under the care of the late Dr. Haig Ferguson. The patient had had her cervix amputated previously by Emmet himself, and subsequently had seven abortions. A first and living child was at last obtained after she consented to remain in bed from the onset of the pregnancy. In the last nine months he had encountered nine further cases of abortions occurring for the first time after cervical amputation. Discussing the question of dystocia, Dr. Hunter went on to describe a series of eighteen cases of labour following cervical operations. In ten the labour was uneventful, in three Caesarean section proved necessary, in three vaginal Caesarean section, and manual dilatation of the cervix was needed in two cases. There were three maternal deaths following delivery by the vaginal route, all being due to a rupture of the cervical stump extending up into the lower uterine segment.

Modified Plastic Operation

In an attempt to minimize the dangers of cervical plastic surgery, Dr. Hunter said he had devised a modification of the usual plastic technique to be used in some cases of prolapse occurring in young women, particularly those cases in which there was little cervical hypertrophy present and the length of the uterus did not exceed three and a half inches—cases in which there was relaxation of all the uterine supports. Essentially the operation consisted of one circular incision about half an inch above the external os, and another one inch to one and a half inches above this, enabling a complete circle of vaginal skin to be removed. The customary anterior colporrhaphy was then performed and completed by first suturing the cervix to the vaginal skin, beginning behind and working round to the front at each side. Thus the Fothergill principle of sliding the uterus upwards and backwards was maintained but with conservation of the cervix. Sometimes after the operation the uterus tended to remain in the vaginal axis. This might be remedied by opening the anterior peritoneal pouch and stitching the uterus to the peritoneum at the level of the anterior colporrhaphy, or alternatively by performing a Gilliam's suspension operation.

Professor DANIEL DOUGAL said he had done a similar operation on one occasion; he advocated only a low amputation in these cases of prolapse in young women. Mr. JEAFFRESON (Leeds) confirmed from his own cases the increased tendency to abortion after cervical amputation. The main technical operative difficulty in dealing with this type of prolapse was that unless something was done to fix the cervix the vaginal walls tended to sag after the operation.

Mr. GLYNN DAVIES (Sheffield) stressed the need for removing the unhealthy tissues surrounding the os uteri; he found that removing but a shaving of the cervix sufficed in performing the Fothergill operation. In an analysis of 400 cases he had found that only 60 per cent. of the women who could have conceived after the operation did so. Mr. BRYAN WILLIAMS (Liverpool) did not consider that cervical repairs had a significantly sterilizing effect, but regarded routine amputation of the cervix as quite unjustifiable in women of child-bearing age. Professor W. FLETCHER SHAW welcomed criticism of the Fothergill operation in view of its widespread adoption. He did not think the operation had a sterilizing effect, rather the reverse; in about one-third of the cases the prolapse recurred after a subsequent labour.

Local News

NEW ZEALAND

[FROM OUR CORRESPONDENT IN WELLINGTON]

When an Insured Person is Not Insured

Whether tetanus, in a case which ended fatally, was an injury received when a woman fell from a motor-car, or whether it was only the result of the injuries, was one of the questions that arose in an interesting case decided by the New Zealand Court of Appeal in judgments delivered on April 29. The appeal was brought by an insurance company against the decision of Judge Northcroft, who held that the administrator of the estate of a deceased woman was entitled to recover from the company the sum of £1,000, being the amount the woman was insured for at the time she fell from a moving car and suffered slight physical injuries from which tetanus developed. Three judges allowed the appeal and one dissented.

The Chief Justice said that the correctness of the decision depended upon the true construction of the insurance policy. The policy provided that the company should pay to the insured or her personal representative:

"(*a*) if the insured shall within three calendar months of the occurrence of the accident die solely as the direct result of the actual physical injuries received in the accident, the sum of £1,000 . . . provided that no compensation shall be payable under Section (*a*) when the death is due to a disease which is the direct or indirect result of the injuries received in the accident, or which may attack the insured in consequence of his lowered vitality, whether such lowered vitality is due to the accident or not, or for death due to a disease from which the insured suffered prior to the accident, and which has been intensified by the accident."

The Chief Justice declared that the disease itself could not be said to be part and parcel of the "actual physical injury" received in the accident. The most that could be said, as the trial judge had found, was that at the time of the accident there was imported into the wound dirt which included germs or spores of tetanus. The case, in his opinion, seemed to be that of a disease "supervening and consequent upon the actual physical injuries." In other words, the insured sustained actual physical injuries, the disease of tetanus supervened as a direct result of such injuries, and the insured died as a result of that disease. Thus the case came within the proviso. He also stated in his judgment as follows:

"There is no reason why an insurance company, if it thinks fit, should not by appropriate exception or proviso exclude liability where the death is due to disease, however that disease may be caused. That is exactly what has been done in this case. If I am right, then, even though there was imported into the wound at the time of the accident dirt which contained germs or spores of tetanus, and such importation can be said to be part and parcel of the actual physical injury, the death of the insured was admittedly due to the disease of tetanus which developed some days after the injury. Such disease was the direct result of the injury—that is, of the importation of the germs or spores into the wound. The company in this case had expressly protected itself against liability where the decease was due to a disease supervening on the injury, and not merely against liability where the decease was due to an intervening disease."

The dissenting Judge held that the language of the exception or proviso in the insurance policy was inappropriate to exclude a disease, such as tetanus in this case, which, arising from the accident, was itself one of the injuries and not merely a result of the injuries. Tetanus was not "the result of the injuries" but was in itself the main injury.

National Health Insurance

A special session of Parliament was called to pass a National Health Insurance and Superannuation Act. However, no such legislation was passed because the Government declared that many difficulties lay in the way and much more consideration of the proposals was required. Therefore a special Parliamentary committee was set up to take evidence in the recess and advise the Government. Before this committee had time to do more than begin its investigations, the Prime Minister announced the Government's policy. There is to be a means test for superannuitants, but none at all for the national health service. The latter service is for all, rich and poor alike; it will provide no specialist treatment. The health and superannuation scheme will add a shilling in the pound to income tax and an unknown sum, in addition, will be drawn from the Consolidated Fund. This will assist the redistribution of wealth.

After the Prime Minister's policy was announced the Parliamentary committee continued to take evidence. Testimony from representatives of the medical profession was not very well received. The views of witnesses representing the Hospital Boards Conference were, in the main, at variance with the Prime Minister's proposals. A representative of the Douglas Credit Group said the whole scheme could be made to cost nothing. At present, therefore, it may be said without fear of contradiction that nobody knows in what precise way national health is to benefit. Facilities for drinking medicine will be increased and the hours extended.

ENGLAND AND WALES

King Edward's Hospital Fund

The Duke of Kent, presiding over the annual meeting of the President and Council of King Edward's Hospital Fund at St. James's Palace, announced the start of the new experiment in co-operation in the voluntary hospital service of London—namely, the establishment jointly by the hospitals and the King's Fund of a central office to facilitate the quicker admission of urgent and acute cases (see *Journal*, June 4, p. 1221, and p. 1325 of this issue). The annual report showed that the hospitals taken together had increased their income in 1937 by about £350,000. Expenditure had also increased, however, and the net result was a small credit margin of about £8,000 on a turnover of over £4,500,000. This was better than in 1936, when there was a small aggregate deficit for the first time since 1926, after which year the aggregate income of the London hospitals had increased from a little over £3,000,000 to well over £4,000,000 and the total receipts for capital and maintenance had grown to £5,000,000, including more than £2,600,000 in voluntary gifts and over £1,000,000 contributed by patients. The Duke of Kent added that this result had not been attained without great personal efforts and sacrifices on the part both of hospital workers and of members of the public, and that still greater efforts would be needed in view of the increasing difficulties of the present time. But they were worth while, for there were great advantages in the system of having two kinds of hospital, the voluntary and the municipal, influencing each other and co-operating to form a complete hospital service, the voluntary hospitals emphasizing the values associated with freedom, elasticity, and personal initiative, so important in medicine and surgery, and the municipal hospitals the values associated with large-scale work and centralized administration under a public authority. The voluntary hospitals were trying to increase their income and on the other hand to combine the advantages of organization with those of freedom by means of voluntary co-operation. The King's Fund had from time to time been able to help the hospitals in their efforts to develop new sources of income. Within the last two years the hospitals had agreed to the inauguration of a combined flag-day, which had succeeded splendidly. It was announced by the Distribution Committee that it now had a stock of seventeen grammes of radium, most of which was out on standing loans to various individual hospitals; a small quantity was kept in a pool, from which it was lent to certain hospitals when it was needed for a patient. Thus, the newer forms of radium treatment could be developed where radium was applied in large quantities at a distance from the patient.

Home Service Ambulances

The nineteenth annual report of the Home Service Ambulance Committee of the Joint Council of the Order of St. John and the British Red Cross Society states that the ambulances carried 161,840 patients during 1937. In the course of the year under review two new stations were equipped, one at Kington in Herefordshire, the other at Ripley in Derbyshire. The report describes the notable increase in comfort, and even luxury, which is a feature of modern ambulances, so that journeys of two hundred miles or more are undertaken without undue distress for the patient. Improvements have also been evolved in methods of loading and unloading stretchers. With regard to the *x*-ray department it is stated that the mobile *x*-ray unit is able to carry out in private houses and nursing homes radiographic work of a quality comparable to that produced by the stationary unit of a large hospital. The service provides both a high-powered unit for ultra-rapid chest radiography and a low-powered set for fine focus maximum detailed investigation of bones and joints. The report stresses the importance of an adequately trained personnel, imbued with sympathy, knowledge, and judgment. Except in times of special emergency the transference of the ambulance work of the country to municipal or national control is not advocated. It is, however, suggested that a fuller recognition of a service which carries a growing burden of public work is desirable on the part of local authorities, especially those responsible for county administration.

Sewage in the Mersey Estuary

In a report issued as Water Pollution Research Technical Paper No. 7 by the Department of Scientific and Industrial Research (H.M. Stationery Office, 30s.) a detailed description is given of the results of a chemical, hydrographical, and biological investigation of the effects of the discharge of crude sewage on the amount and nature of the deposits in the estuary of the River Mersey. For many years the possible effects on the conservancy of the estuary of the direct discharge of sewage from a population of nearly one and a half million people have given rise to controversy among the local interests concerned. Since 1890, to facilitate the passage of ocean-going ships, the sea channels in Liverpool Bay have been deepened by continuous dredging. It had been suggested that the nature

of the material deposited in these channels was so altered by the presence of sewage in the water as to increase the difficulty of dredging. In 1932 the local sanitary authorities and the bodies interested in the navigation of the estuary invited the Department of Scientific and Industrial Research to investigate the effect of the sewage on the amount and hardness of the deposit, and agreed to pay the whole cost of the work. The following year a laboratory was set up in Liverpool and two boats were specially built for the investigation, which occupied four years. The quantities and nature of the sewage and principal trade wastes discharged into the estuary were ascertained, the concentration of polluting substances in the estuary water under different tidal conditions was determined, and an estimate was made of the length of time spent by polluting substances in the estuary before passing out to sea. Laboratory experiments were then made to observe the effect of sewage on the rate of sedimentation of mud and silt under conditions similar to those which occur in the estuary. Numerous samples of mud and other solid matter for examination were taken from different parts of the upper estuary of the Mersey and from Liverpool Bay, and for comparison samples were also collected from relatively unpolluted estuaries and marshes elsewhere. Some 180,000 to 240,000 cubic yards of sewage are daily discharged directly into the estuary, but the concentration of sewage in the greater part of this water does not exceed 1 per cent. by volume, and in no considerable volume of water does it exceed 5 per cent. The quantity of inorganic suspended matter discharged in the sewage in a year is less than 25,000 cubic yards, or 0.0025 per cent. of the capacity of the upper estuary. The concentration of organic matter in mud from the Mersey was found to be approximately the same as that in mud from the bed of the Irish Sea, from Liverpool Bay, and from the relatively unpolluted estuaries examined. Sewage, in the concentration in which it is present in the Mersey, has no appreciable effect on the composition of the intertidal deposits. In direct answer to the terms of reference the report states: "The crude sewage discharged into the estuary of the River Mersey has no appreciable effect on the amount and hardness of the deposits in the estuary." The investigation was not concerned directly with such problems as the effect of sewage on the sanitary condition of the river and foreshores nor on fisheries, but much of the work described, particularly that dealing with the conditions affecting the rate of sedimentation of suspended solids, is also of far wider interest, since sedimentation is an essential process in many methods of treatment of sewage and trade effluents and of water for domestic supply.

International Psychotherapy Congress

The provisional programme has now been issued for the tenth International Medical Congress for Psychotherapy, to be held at Balliol College, Oxford, from Friday, July 29, to Tuesday, August 2, under the presidency of Professor C. G. Jung. Before the Copenhagen meeting last year the congress had taken place in various towns in Germany; this is its first meeting in an English-speaking country. On the Friday evening, after dinner, there will be a reception by His Majesty's Government in Christ Church Hall, the guests being received by the Minister of Health, and on the Monday evening the Mayor of Oxford will give a reception in the Town Hall. The main subjects for discussion at the scientific sessions are: (1) psychology of the phases of life; and (2) psychotherapy and psycho-somatic problems. The languages of the congress are English, German, and French. Synopses of the papers read will be provided in all three languages, and discussions will be interpreted. Members, both men and women, will be accommodated in the students' rooms in Balliol College and in Somerville College. The honorary secretary of the organizing committee in England is Dr. E. B. Strauss. The business secretary is Mr. M. H. Gibbs-Smith, whose office address until July 28 is 106, Brompton Road, London, S.W.3.

SCOTLAND

Glasgow Postgraduate Courses

A summer session for postgraduate teaching has again been arranged under the auspices of the Glasgow Post-Graduate Medical Association. The facilities will fall chiefly into three divisions: (*a*) general medical and surgical course, (*b*) intensive courses, and (*c*) clinical assistantships. During the last two weeks of July and the month of August whole-time courses, for which an inclusive fee is charged, will be conducted in some of the general and special hospitals. The course will include most of the subjects of interest to the general practitioner—the mornings being occupied with general medicine and surgical diagnosis and minor surgery in the Victoria, Western, and Royal Infirmaries, and the afternoons with special subjects in the special hospitals or departments of the general hospitals, two subjects being dealt with each afternoon. In a number of the institutions taking part in the work of the association clinical assistantships are available in the summer months as well as at other times. Full particulars may be had from the secretary, Glasgow Post-Graduate Medical Association, The University, Glasgow.

Long-term Sickness in Scotland

At the annual conference of the Association of Approved Societies, held in the Empire Exhibition, Glasgow, on June 3, Mr. W. S. Douglas, Secretary of the Department of Health for Scotland, said that health in Scotland was not so good as it was in England. The Government had approved the principle of holidays with pay; such holidays would be a tremendous contribution to the health of the nation. Miss Muriel Ritson, Controller of Health and Pensions Insurance, said that the greatest boon conferred upon workers by the National Health and Unemployment Insurance Acts was not to be found in the actual cash benefits but in the sense of security which they gave to the whole mass of the working population. It was a matter for regret that twenty-seven years of national health insurance had not seen a really great diminution in sickness among the insured population. A bad epidemic of influenza last year had affected every thirteenth member of the insured population, and had caused one-fourteenth of the whole amount of sickness during the year, costing in Scotland alone nearly £200,000. At the same time the nation was fitter than it was twenty or thirty years ago, and the population was not really C3, although there were so many days of illness. Only 25 per cent. of the insured population had some sickness during the year; 75 per cent. were fit throughout the twelve months. Half the total volume of incapacity was due to long-term illness not confined to people in the older age groups. The chief factor responsible for long-term illness in young people was tuberculosis.

At the concluding session of the conference a proposal that dental and ophthalmic benefit should be provided under the National Health Insurance Act for all insured persons was discussed. It was mentioned that the Merthyr District Miners' Society had provided dental benefit for all members during the past five years at an average cost of 4s. 5d. per member. Taking this as an index, the total cost of dental benefit for 18,000,000 insured persons would be £3,975,000. It was pointed out by several members that the whole question was one of finance, and that it would be necessary either to agree to a system of pooling services or to increase the contributions. It was stated that Sir Kingsley Wood had calculated that it would cost £7,000,000 to provide statutory dental treatment, and on the basis of members paying half costs £2,000,000 a year was being spent at present on such treatment. An extra 3d. a week of contribution would be required to meet this additional service. The proposal was defeated.

Correspondence

Irradiation or Surgery for Cancer?

SIR,—Mr. E. R. Garnett Passe in his letter to you (*Journal*, June 4, p. 1231) makes comparisons between the results of radium treatment of carcinoma of the mouth published by the National Radium Commission and the results obtained by surgery by Mr. Norman Patterson (*Lancet*, September 22 and 29, 1934, not 1936 as given by Mr. Passe).

Although Mr. Passe quotes extensively from the seventh and eighth reports of the Radium Commission he has evidently not read the statement made in the seventh annual report (p. 44) that:

"The results shown by the survival rates give a picture of the average results of radium treatment at a very widely scattered group of hospitals and must not be compared lightly, either with the results of special clinics, or *with results based upon a picked series of cases treated by a highly skilled surgeon*. On the contrary, the results . . . may be said to be those achieved by the medical skill of a large part of the country working with radium, in conjunction with other methods, upon the average cancer patient seeking treatment."

A moment's consideration will show that the results published by the Radium Commission are in no way comparable with the results obtained by surgery by Mr. Patterson. For instance, in the fauces and tonsil group 61 per cent. of the Commission's series had glandular involvement when they were first seen, compared with 45 per cent. of Mr. Patterson's series. Similar figures for the tongue group are 57 per cent., compared with 48 per cent. Moreover, there were not merely more patients with secondary glands in the Commission's series, but many of the patients had fixed and, not infrequently, ulcerating glands which no surgeon would have attempted to remove. At least 5 per cent. of the patients in the Radium Commission's series were given purely palliative treatment—that is, the glands were not treated even though they were obviously involved, the treatment being directed simply to palliation of the symptoms arising from the primary growth. Again, many of the patients in the Commission's series were treated by radium because they were unfit by reason of their general condition or because of their age for surgical intervention.

No statistics have been published by the Radium Commission comparing the results of radiological as opposed to surgical treatment of the secondary glands in the neck. The reason is that no comparable series of cases treated by these different methods exists. The series of cases treated by radium includes so many very advanced and inoperable cases that any comparison is invalidated from the outset.

If Mr. Passe had stopped to consider these points, which are clearly stated in the Radium Commission's reports, he would not have made the fallacious comparisons which appear in his letter. Mr. Passe is also guilty of falling into the common error of putting forward results based on small numbers of cases. For instance, he quotes a five-year survival rate of 33 per cent. for carcinoma of the alveolus treated by surgery compared with a 30 per cent. three-year net survival rate for patients treated with radium. On examination, the 33 per cent. survival is found to be based on three cases, one of which lived for five years (*Lancet*, September 29, 1934, p. 695), whereas the Radium Commission series included 242 patients. *Had these two groups of patients been comparable in all respects* and a difference of 3 per cent. found in their survival rate over the same period, it would not be statistically significant even if there were 300 (not 3) cases treated surgically. It would require at least 1,000 patients treated by each method to justify a statistical assertion that a difference of 3 per cent. was significant and was not due to chance.

Mr. Passe has misquoted the results published by the Radium Commission. Nowhere has the Commission published figures for the results of treatment of the *hard palate*; the "palate" group used by the Commission includes both the hard and soft palate. We are unable to find in the Commission's reports any material which would enable the three-year survival rate to be calculated for the combined group of fauces, tonsil, and soft palate which Mr. Passe quotes as 20.8 per cent. This figure does not appear in the report.

Mr. Passe complains that only 46 per cent. of the cases reported by the Commission were "confirmed" by histological diagnosis. Mr. Patterson says (*Lancet*, September 22, 1934, p. 635):

"So characteristic indeed is a carcinoma in the region under consideration that for purely diagnostic purposes it is seldom necessary to make a preliminary biopsy. . . . Many cases treated by surgeons in the past and quite a number which have recently undergone treatment with rays are unaccompanied by any pathological report, but in the case of the primary growth the margin of error when the observer is a clinician of experience is probably negligible."

Mr. Passe further states that surgery introduces no new disease but that radium may be followed by unfortunate sequels. Even Mr. Passe must know that operations for carcinoma are not infrequently followed by sepsis, necrosis, pneumonia, and even death, these perhaps masking some of the failures of surgery while those of radium live to bear witness of the failure of their treatment. In spite of all, it is interesting to note that in 1934 Mr. Patterson was able to write (*Lancet*, September 29, 1934, p. 694), speaking of carcinoma of the posterior part of the tongue:

"It is therefore questionable whether surgery should be employed save perhaps in an exceptional case, one of the exceptions being carcinoma of the tonsil which has grown downwards and invaded the tongue. Most tumours in this region should be treated by irradiation."

Since that date the technique of radiotherapy has vastly improved, and we are not aware that the same can be said of surgery.—We are, etc.,

GEORGE F. STEBBING, F.R.C.S.
ANTHONY E. C. HARE, M.A., Ph.D.
National Radium Commission, London, W.,
June 13.

Wound Healing in Carcinomatous Patients

SIR,—The letter of Mr. L. A. Riddell in the *Journal* of May 21 (p. 1130) raises several interesting points in connexion with the healing of laparotomy wounds in patients with carcinoma of the stomach. In the cases reported, Mr. Riddell stresses the rapid healing and the thin linear scars. At the same time, it is admitted that those patients had advanced malignant disease and died within the course of a few weeks or months. I cannot, however, accept the argument that carcinoma favours the proliferation of fibroblasts or leads to an increased tendency to form firm fibrous tissue. It is a general experience that failure of union is unfortunately common in the surgery of patients with malignant disease, especially of the gastro-intestinal tract, and to this rule carcinoma of the stomach is no exception. This failure of response

may be shown at the site of operation on the stomach, in the abdominal wound itself, or as a post-operative pulmonary complication. In a recent series of 506 cases of carcinoma of the stomach at St. Bartholomew's Hospital, which I investigated, exploratory laparotomy was carried out in 136. Of the cases explored, twenty-nine, or 21.3 per cent., died as the result of the operative intervention. This group, of course, was that in which the malignant disease was most advanced and for which both radical and palliative surgery were out of the question. In the majority of cases death occurred within a week of operation, and therefore at a time when the healing of the abdominal wound was not complete. But I believe that whatever the mode of death, be it from peritoneal or pulmonary infection, it represents the failure of the normal reactionary processes to operative and anaesthetic trauma in a patient weakened and wasted by malignant disease.

What is the explanation of the good abdominal scars which Mr. Riddell has noted in his cases? The healing of surgical wounds in general in relation to subsequent scar formation depends on several factors. The first of these is that the incision should be so planned that it is parallel to Langer's lines of elasticity of the skin. The second is that the incision should be at right angles to the surface of the skin. The third is that the skin should be undercut to free it from the subjacent muscles. The fourth is that reactionary changes produced by ligatures and skin sutures should be minimal. Finally, of course, accurate coaptation of the skin itself is essential. This matter has been dealt with very fully in a recent article by Conway in *Surgery, Gynecology and Obstetrics* (February, 1938). The good scars that are obtained in patients with advanced malignant disease occur because the local fibroblastic response is subnormal, because there is usually marked laxity of the tissues and therefore absence of tension in the skin itself, and because the patients are often bedridden or almost so. On the other hand, quite apart from operative technical considerations, the patient who gets the broad or the keloid type of scar is usually one who is fairly active or muscular, who has a fair amount of subcutaneous fat, or even puts on fat after operation, and one who has not an incurable or fatal disease.

The high mortality after exploratory laparotomy for carcinoma of the stomach, and the "good"—that is, cosmetic—scars which are so often seen in those patients who survive operation are both aspects of the same phenomenon—namely, a response which is less than the normal to the stimulus of operative trauma.—I am, etc.,

London, W.1, June 7. REGINALD T. PAYNE.

Treatment of Placenta Praevia

SIR,—I was very interested in the excellent results in the treatment of placenta praevia recorded by Drs. O. Lloyd and J. E. Giesen in the *Journal* of June 11 (p. 1258). An analysis of the results seems to show that although a plea is made for plugging the vagina the worst figures were obtained when this technique was followed; of the ten deaths in 286 cases five were in patients so treated.

I was brought up to believe in the value of vaginal plugging, but it was scarcely ever done while I was Master of the Rotunda. It predisposes to sepsis, and it is better to have the patient prepared for the preconceived treatment, which can then be carried out without unnecessary manipulations and without plugging. I believe that in every paper on placenta praevia the danger of delivery before the cervix is fully opened should be stressed, especially in view of some recent communications in the *Journal*. My views on treatment are expressed in Tweedy's *Practical Obstetrics* (Bethel Solomons and N. Falkiner, 1937), and it can be seen there that there were 138 cases during my Mastership with two deaths—a mortality rate of 1.4 per cent. These two deaths occurred early, and were due to errors in technique. This letter is written to praise and not to decry, and especially to point out that the excellent results of Drs. Lloyd and Giesen could probably be improved if plugging were omitted. There should be no mortality from placenta praevia.—I am, etc.,

Dublin, June 13. BETHEL SOLOMONS.

"Gonococcus Antitoxin" for Gonorrhoea

SIR,—We have now taken advantage of Dr. Anwyl-Davies's invitation to visit the venereal department of St. Thomas's Hospital and have there examined the case records of twenty-five patients treated with "gonococcus antitoxin." We ask your permission to summarize our views on this question in the light of the additional information so obtained.

Dr. Anwyl-Davies wrote (*Journal*, March 26, p. 701) as follows:

"Since December 2, 1937, all the male out-patients attending the venereal department of St. Thomas's Hospital, suffering from acute gonorrhoea, who can attend regularly have been receiving daily doses of 1 c.cm. of the antitoxin as routine, with adjuvant treatment. This could not be done, nor would I permit it, were they obtaining no therapeutic benefit or experiencing the severe reactions described in such a high percentage by E. T. Burke *et al.*"

It seems that since December, 1937, all patients receiving injections of "antitoxin" in this department have received, concurrently, sulphanilamide preparations by mouth as part of the routine adjuvant treatment. Therefore it is clear that any discussion of the results obtained in patients who began treatment after that date is irrelevant to the present controversy.

Dr. Anwyl-Davies has made the following statements with regard to the results obtained in twenty-five patients who began treatment previous to that date and whose records we were permitted to examine: "... the results are comparable to those already published by myself" (*Journal*, March 26, p. 701); and "... the cases *were* carefully investigated, and 'prontosil or some allied substance' was *not* used 'by way of adjuvant'" (*Journal*, May 14, p. 1069).

Analysis of these twenty-five case records reveals the following points: All these patients had urethral irrigations from the first as adjuvant treatment. Two of them received "prontosil or some allied substance" after they had failed to respond to the initial treatment. In no case did the urethritis subside during the period of "antitoxin" treatment. In fifteen cases there were records of microscopical examinations of smears from urethral discharge after the first few days, and in these fifteen the average duration of known persistence of gonococci was forty-nine days. Others had persistent purulent discharge, but there was no record of microscopical examination. The twenty-five patients may be divided into three groups: six who remain under treatment, twelve who defaulted, and seven who have been discharged. The first group of six have all received treatment for approximately eight months, and in two of them the signs of urethritis still persist. The average duration of signs of urethritis in the other four was just under six months. Of the twelve defaulters, one defaulted after the first injection, two in the first month, three in the second month, three in the third month, two in the fourth month, and one after five

months. At the time of default eight had persistent urethritis and four were at the stage of tests for latency. The third group consists of seven patients who were discharged as cured after periods of treatment which averaged seventy-eight days, but the tests of cure applied were not equivalent to the standard recommended by Dr. Anwyl-Davies (*The Treatment of Venereal Diseases in General Practice*, 1935) and we regard them as inadequate. Further analysis is limited to twenty-four patients, thus excluding the one who defaulted after the first injection. The toxic effects recorded are very similar to those described by ourselves and included pyrexia up to 102° and 103° F., urticaria, joint effusions, arthralgia, malaise, headaches, pains in the back, local pains, etc. Of the total of twenty-four, eleven suffered severe reactions as the result of the "antitoxin" injections. Four others complained of symptoms of moderate severity. Thus fifteen, or 62 per cent., of these patients experienced toxic effects.

As regards complications, two developed epididymitis, one acute prostatitis, and two acute posterior urethritis subsequent to injections. The complication rate was thus 21 per cent.

Tests showed evidence of latent infection in eleven out of the fifteen patients who remained under treatment until the urethritis had subsided.

It is now quite clear to us that the effects obtained by Dr. Anwyl-Davies in using this preparation were very similar to those recorded by ourselves, and the discrepancy between our reports is one not of results but of interpretation of results. We have failed to find any justification for the claims which Dr. Anwyl-Davies has made on behalf of this preparation, but we are content to leave it to your readers to decide which of these interpretations is more fully justified by the available facts.—We are, etc.,

E. T. BURKE. A. H. HARKNESS.
J. GABE. A. J. KING.

London, W.1, May 27.

SIR,—We accepted Dr. Anwyl-Davies's invitation, and on May 20 visited the St. Thomas's Hospital Venereal Diseases Clinic and inspected the records of the twenty-five cases mentioned by him in your correspondence columns. In order not to cause Dr. Anwyl-Davies further inconvenience we were at the clinic at the same time as Drs. Burke, Harkness, Gabe, and King, but we would like to point out that our conclusions are entirely independent of theirs.

From a careful examination of the case sheets the following facts emerged:

1. *Adjuvant Treatment.*—All patients had urethral irrigations from the first, with the exception of one patient who defaulted after the first injection; two patients had "prontosil or some allied substance." (See *Journal*, May 14, p. 1069.)

2. *Toxic Effects.*—Practically half of the cases suffered severe toxic effects from the antitoxin injections, our criteria of severe toxic effects being the following: pyrexia up to 103.2° F.; severe malaise, in one case necessitating fourteen days in bed; severe generalized urticaria; severe pains and stiffness in the joints; diarrhoea and vomiting; in several cases injections had to be delayed in order to allow for recuperation. Three cases suffered moderate toxic effects such as pain and swelling at the site of injection, headache, and general malaise of moderate degree.

3. *Defaulters.*—Apart from the one patient who defaulted after the first injection seven out of the remaining twenty-four defaulted during the persistence of urethritis; of the remaining seventeen two had persistent urethritis after eight months, and in the remaining fifteen the urethritis was present on an average for over fourteen weeks; in all, twelve cases defaulted at various stages of treatment.

4. *Complications.*—Two cases developed epididymitis; one acute prostatitis; two acute posterior urethritis—all following antitoxin injections. This gives a complication rate of over 20 per cent.

5. *Tests of Cure.*—Although we found that seven cases were discharged as cured, in our opinion the tests of cure in all cases were inadequate and, furthermore, inadequate to the standard recommended by Dr. Anwyl-Davies himself in his book, *The Treatment of Venereal Diseases in General Practice*, 1935.

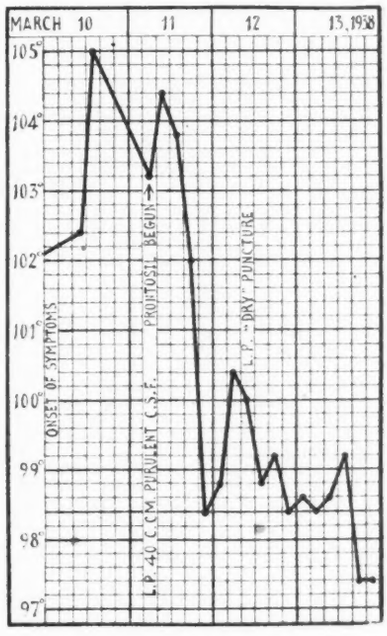
In conclusion it seems obvious to us from the above facts that the results of the antitoxin treatment at the hands of Dr. Anwyl-Davies are almost precisely similar to those obtained by Drs. Burke, Harkness, Gabe, and King. Therefore we find it impossible to accept the claims that Dr. Anwyl-Davies has made for this form of treatment in acute gonorrhoea.—We are, etc.,

N. SEDDON-TAYLOR.
W. LESTER.

London, W.2, May 30.

Sulphanilamide in Meningitis

SIR,—I have been interested in the reports in the *Journal* recently on the treatment of meningitis with sulphanilamide, and it may be of value to record my experience in Northern Nigeria, where the meningococcal type of meningitis occurs in epidemic form at the end of the dry season. This year the epidemic was especially severe and the mortality appeared to be practically 100 per cent. The cases were of a fulminating type, death



supervening in three to four days as a rule. This was the case until sulphanilamide was secured from the coast, and its effect on the next admission is seen in the accompanying chart, the temperature remitting within twelve hours of the administration of sulphanilamide and recovery being continuous. Two prontosil album tablets were given every eight hours for three days, one tablet eight-hourly on the fourth day, and one tablet daily for a further four days. A second case made a similar recovery, and the treatment was then taken over, on his return from leave, by the permanent medical officer, who has, I believe, treated about thirty more cases with results well worth recording.—I am, etc.,

A. L. CRADDOCK.

Late C.M.S. Hospital, Zaria, West Africa.

The Adrenal Cortex and Intersexuality

SIR,—I have read with great interest the account given by Dr. H. W. C. Vines of the pathology of the adrenogenital syndrome in the volume *The Adrenal Cortex and Intersexuality* by Broster, Allen, Vines, *et al.* (see leading article in the *Journal* of May 14, p. 1056). In so doing one was struck by the fact that, with the exception of certain of the cases of Cushing's pituitary basophilism (which are, of course, on a different footing), feminization of the male and iso-sexual precocity in the female occur, so far as the adrenal is concerned, only in malignant conditions—that is, in the so-called carcinoma and adenocarcinoma of the cortex. Androgenous development alone occurs in "foetal masculinization" or "pseudo-hermaphrodism," and there is no reliable record of the occurrence of feminization in "post-pubertal and adult virilism" of the type with cortical hyperplasia and hyperfunction. The fact that male sex hormones may have an oestrogenous effect, as is shown, for instance, by the observations of Korenchevsky (*Journal*, November 6, 1937, p. 896) of feminization of rats by means of the male hormone, testosterone propionate, has a bearing on the general question, as it could be argued that the very exceptional feminization, etc., in those cases was brought about in this way.

The facts as just adduced are significant, however, from another point of view, since the occurrence of malignancy does not signify simply hyperplasia and hyperfunction, by which exaggerated normal effects are produced. I have suggested elsewhere that malignancy means essentially an alteration and mutation of the genes of the cell concerned, whereby modifications are produced in its growth, form, and function. The infinitesimally small number of cases of feminization of the male and of iso-sexual change in the female could be explained thus on the basis of alteration in function from androgen to oestrogen formation, brought about by a genic change in the malignant conditions existent.

The cortex of the adrenal, androgenic in the foetus, therefore, would seem to retain this capacity through life except in a small proportion of the malignant cases just referred to, for the reasons stated. In view of this persistence it would appear that the existence of a neutral soma after castration, such as is said to occur, for instance, in the capon, is an impossibility, since the adrenal cortex would be there to sway the body to the male side.

Witsch (Allen: *Sex and Internal Secretions*, 1932) brings evidence to show that the cortical zone of the gonad acts as a female and the medulla as a male inductor. This would explain the occurrence of the androgens and oestrogens in the urine of both sexes, where one sex would be represented by its corresponding sex cells and hormone and the other by hormone alone on the lines of the occurrence of androgens in the adrenal cortex. In this context it would seem that Dr. Vines's statement that "the sexual changes caused by these pathological states may all be referred to abnormalities of a normal mechanism of sexual development in which the gonad plays a passive part" is too sweeping. Doubtless the adrenal cortex (assisted, however, by the medulla of the gonad) gives a male "twist," with corresponding vestigia of the male sex organs, to a chromosomal female: but there remains still to be explained the female "twist," with corresponding vestigia of the female sex organs, given to a chromosomal male. It seems that the cortex of the gonad, in virtue of its female-inducing capacity, could alone do this, while a direct action, possibly by means of prolan, of the pituitary on this cortical zone of the testicle in the production of feminization of the male in some cases of Cushing's pituitary basophilia has not been excluded. The annotation in the *Journal* of November 13, 1937 (p. 974) on gynaecomasty and testicular function possibly has a bearing on the latter point as also on the earlier discussion on malignancy.

Although Dr. Vines states that a definite claim cannot be made that the fuchsinophil substance is actually the masculinizing hormone or pro-hormone, it would be interesting to know if a positive fuchsinophil reaction is obtained in the actively functioning testicle.—I am, etc.,

J. P. MCGOWAN.

Aberdeen, June 2.

Psoriasis

SIR,—I have recently investigated the incidence of psoriasis in the out-patient department for diseases of the skin at the Royal Northern Hospital. My results correspond so closely with those of Dr. W. S. W. Guthrie (4.5 per cent.) published in the *Journal* of May 21 (p. 1125) that I think they may be of interest.

During the five years from 1931 to 1935, out of a total of 5,900 recorded new cases 265—that is, 4.4 per cent.—were diagnosed as cases of psoriasis. Of these, 100, or 37.7 per cent., were male, and 165, or 62.3 per cent., were female. The age incidence of 253 of these cases was also investigated and is tabulated below.

TABLE I

Age in Years	0–10	10–20	20–30	30–40	40–50	50–60	60–70	Over 70
Males ..	9	18	24	19	11	9	6	2
Females ..	18	23	41	17	22	18	15	1

The youngest case in this series was a male aged 2 years; the oldest was a female aged 81. It will be noted that the frequency is greatest in the age period 20 to 30, and this applies to both males and females. About 42 per cent. of all the recorded cases (male and female) were between 10 and 30 years of age. Among women 53 per cent. were under 30.

In Dr. John T. Ingram's most interesting article on some problems in psoriasis (*Journal*, April 23, p. 881) it is surprising that no mention is made of the curious relation between psoriasis and joint affections or so-called rheumatic pains, a subject greatly discussed, especially by French dermatologists. Whether one regards these arthropathies as being of neurogenic or of rheumatic or gouty origin—and the former view appears to be more prevalent now—it is a remarkable fact that joint pains, neuralgias, and myalgias are often complained of by persons with psoriasis. The predilection of the disease for areas around joints (knees, elbows, spines, etc.) is certainly a striking concurrence, and the fact that psoriasis may be provoked by similar factors in common with the various forms of rheumatism (fibrositis, myositis, rheumatoid arthritis, osteo-arthritis, and gout) is noteworthy. Both psoriasis and these forms of rheumatism are less prevalent in summer and in warm countries; both are comparatively rare in the Tropics. A low-protein diet has been recommended for both conditions, and both are supposed to be aggravated by the excessive consumption of alcohol. Foci of streptococcal infection are held to be responsible for the acute exacerbation of both conditions, and both of them seem to have some relation with acute attacks of tonsillitis. On the other hand, in well-established cases of psoriasis in adults it is often impossible to find any evidence of any streptococcal focus of infection whatsoever, which is equally true about many well-established cases of rheumatoid arthritis. Apart from these rheumatic associations of psoriasis, a definite syndrome—arthropathic psoriasis—

is well recognized. The fact that Crocker in this country strongly advocated the use of salicin and the salicylates in adequate doses in the treatment of psoriasis is interesting in this respect.

A preliminary investigation of twenty cases of psoriasis, with special reference to the situation of the lesions, the family history, the presence or absence of so-called "rheumatic pains," and other associated conditions, shows interesting results.

TABLE II

	Age and Sex	Situation of Lesions	Family History	Rheumatism	Associated Condition
1	Female (21)	Wrist, legs, scalp, nails (pitting), elbows, back (spine)	Nil	Nil	Disappeared on marriage, also during pregnancy. Improved after sunbathing
2	Male (68)	Elbows, knees, legs; nails pitted	Nephew? psoriasis	xx	
3	Male (34)	Elbows, knees	Nil	Nil	Chilblains show marked exfoliation (parakeratosis). Similar exfoliation after sunbathing
4	Male (41)	Elbows, knees, guttate on trunk	Mother and brother have psoriasis	Nil	
5	Male (5)	Arms, elbows, forearms, legs	Nil	Nil	
6	Female (34)	Scalp, elbows, knees, trunk	Nil	x	
7	Female (74)	Elbows, knees	Nil	x	Scaly varicose dermatitis of ankle
8	Female (71)	Scalp, elbows, knees	Nil	x	
9	Female (33)	Scalp, arms, nails, knees	?	x	
10	Male (54)	Knees; nails pitted	Mother	x	Varicose veins with scaly dermatitis in both legs
11	Female (12)	Elbows, knees	Nil	Nil	
12	Female (14)	Scalp, elbows, hands, knees, spine	Nil	x	First attack began with menstruation
13	Female (31)	Scalp, elbows, nails, knees, abdomen	Nil	x	Lived in Italy; sunny climate made no difference
14	Female (78)	Scalp, elbows, nails, knees	Nil	x	First attack noticed after amputation of breast at menopause
15	Female (41)	Scalp, elbows, knees, trunk	Nil	x	First attack after confinement. Worse when worrying
16	Male (25)	Scalp, elbows, legs, body	Brother has psoriasis	x	
17	Female (65)	Elbows, knees	Nil	xx	
18	Female (49)	Elbows, knees, trunk	Mother has "eczema" and 11 of her brothers and sisters all had "eczema"		
19	Male (5)	Elbows, knees	Nil	Nil	
20	Female (22)	Elbows, knees, spine	Nil	xx	

It will be seen from Table II that heredity is not such an important factor in psoriasis as is generally stated. Only three, or possibly four, cases out of the twenty had any family history of psoriasis, and of these only two could have inherited the disease from a parent. On the other hand, no fewer than thirteen cases out of the twenty gave a history of "rheumatism." Admittedly the number of cases investigated in this preliminary review is small, and the incidence of pains attributed to rheumatism is high, particularly in patients of advancing years and of the hospital out-patient class, but, even so, one cannot fail to be impressed with the high percentage of cases of psoriasis in which there is a history of joint or muscular pains or which actually show signs of arthritic lesions.

I have to thank Dr. Henry Semon, F.R.C.P., for his kind permission to publish the above figures.—I am, etc.,

Muswell Hill, N.10, May 27. I. S. FOX.

Stored Blood for Transfusion

SIR,—I have read with interest Dr. T. I. Wilson and Dr. J. M. M. Jamieson's article on the use of stored blood for transfusion (*Journal*, June 4, p. 1207) as we have been using stored blood here for some time and now use it almost exclusively. The advantages are obvious, and I think it only a question of a short time before the practice is generally adopted. We withdraw 18 ounces of blood through a 16-gauge transfusion needle into a 20-ounce U.G.B. screw-capped bottle containing the citrate and fitted with a two-way cap to enable suction to be applied, and in this way can fill the bottle in under four minutes. Apart from changing the two-way cap for a sterile aluminium one, which I think is preferable to a wool plug, the blood is never exposed to the air. The blood is then stored at about 3° C., and is warmed to about 37° C. before use: we have so far experienced no reactions. The blood is filtered through gauze but clots are rarely found on the filter. A small tube of diluted citrated blood and a tube of whole blood taken before the needle is withdrawn allow cross-agglutination and a Wassermann reaction to be performed without opening the bottle. We keep in stock two pints of Group 2 (A) and two of Group 4 (O) and have never had occasion to keep it longer than fourteen days.

Not the least advantage is in the economy of "list" donors, of which only one has been used in the last twenty transfusions against the old figure of 40 per cent.—I am, etc.,

E. BIDDLE,
Transfusion Officer, East Suffolk and Ipswich Hospital.

Ipswich, June 7.

Advertisements of Secret Remedies

SIR,—Your leading article on June 4 on "The Trade in Secret Remedies"—inspired by Professor A. J. Clark's book—is supplemented (whether by accident or design) by an equally apposite dissertation entitled "The Beecham Laboratories." Both articles are written with a restraint which makes them the more effective. But in these, as in all other discussions on the subject, no mention is made of the fact that many of the advertisements on which this lucrative trade relies make flagrant use (or abuse) of the good name in which the medical profession is held by the general public. Instances of this tendency will spring to the mind of any reader of the daily papers, exemplified by such phrases as, "then her doctor told her" and "next day at the surgery." (It is of interest to note that one never sees "then her osteopath advised her" or "his naturopathic healer suggested.") The doctor is always unmistakably portrayed, usually with his stethoscope dangling from his ears. It is within the experience and knowledge of all engaged in general practice that this pseudo-professional endorsement of the manufacturers' claims is not without influence on many of our patients. How often has one deprecated the spending

of money—ill afforded—on "tonics," etc., only to be met with the rejoinder: "But I thought that all the doctors approved or recommended it."

An advertisement has recently appeared in the papers by which the public is led to believe that a certain secret preparation, apparently equivalent to the Elixir of Life, the "discovery of an eminent doctor," hitherto prepared by a secret formula known only to a "limited number of medical men" and used by them in hospitals, is now available for the relief of mankind. The inference to be drawn from this advertisement is little short of a libel on our profession, imputing as it does the invention, employment, and eventual exploitation of a secret remedy by a qualified medical man.

Were this and similar advertisements associated with the name of any one practitioner it is easy to foretell what action he would immediately take. But because it is the name of us all collectively which is taken in vain no one apparently considers it to be his duty to protest.

While we are the last to resent any caricature or lampoon—even in a commercial context—we must preserve the right and owe the duty to protect our good name and reputation from that abuse on which the vendors of secret remedies endeavour to found their fortunes.—I am, etc.,

London, W.2, June 6. A. G. EDDISON.

Haemorrhage into Rectus Abdominis

SIR,—With regard to the case report by Dr. F. Bedo Hobbs in the *Journal* of April 23 (p. 895) on a fatal haemorrhage into the rectus abdominis muscle during pregnancy, the record of a somewhat similar case recently under my care may be of interest.

The patient, a white adult male aged 48, while at work on May 5 was suddenly and unexpectedly struck in the abdomen by a block of wood flying from a machine. He felt pain but was able to continue with his work for three to four hours. The pain then became so severe that he reported sick and went home. He was able to walk home—a distance of about a mile—but had several times to stop to rest. He did not sleep at all that night and I was called to see him in the morning of May 6. At this time the temperature was 100.8° F., the pulse rate 84, and the blood pressure 122/80 mm. Hg. Examination of the abdomen revealed board-like rigidity of the right rectus muscle with marked tenderness in the right lower quadrant. The left rectus was not in spasm and deep palpation caused only slight pain. There was no pain over the liver, spleen, or left kidney region. There was a slightly positive Murphy's sign over the right kidney; the liver dullness was intact, and no peristalsis could be heard by auscultation. There was no blood in the urine. The patient felt sick all that day and vomited in the afternoon.

After consultation with a surgeon it was decided to watch the patient without active interference. On the following day, May 7, the temperature was 100° F., and the pulse rate and blood pressure were unchanged, as were the abdominal signs. An occasional peristaltic wave could be heard following manipulation. The patient vomited twice. On May 8 he felt better; his temperature was 99.4° F., his pulse rate 72, and his blood pressure 120/78 mm. Hg. The right rectus was less rigid and the lower quadrant was less tender. On May 9 his temperature was down to 98.4° F., the pulse rate and blood pressure being unchanged; the bowels moved spontaneously for the first time (up to then there had been no movements and cathartics and enemata had been withheld in order to allay peristalsis). The patient's abdomen was slightly less rigid and less tender, and active peristalsis was heard for the first time on auscultation.

The following day, May 10, the temperature rose to 100° F. again, the pulse rate was 68, and the blood pressure 114/72 mm. Hg. The patient was more markedly tender in the right lower quadrant; a hot-water bag was substituted for the original ice bag. On May 11 the temperature was again normal, and the pulse and blood pressure were unchanged. Rigidity was less and there was the suggestion of a mass lateral to the right rectus. On May 12 the rigidity of the rectus had passed off and a mass was definitely felt. It was round, very smooth, very tender, about the size of an orange, and yielded a fluid thrill.

The next day, May 13, the mass had decreased in size by about half. The temperature had been normal for several days now and remained so for the remainder of the illness. The patient's appetite was very poor during the entire time, and in the later stages he complained of great weakness. A tonic was administered, and his appetite and strength increased. On May 14 there was palpable in the right lower quadrant, about two inches above Poupart's ligament, a mass, irregular in outline, firm, of solid consistency, and with no fluid thrill, about two inches long by one inch wide, markedly tender to pressure. Two days later the mass was still present and the patient's condition was unchanged.

On May 18 the patient was very much stronger and was up and about. The mass was about half its original size. He felt very little pain and there was very little tenderness over the mass. He returned to work and has been working since. He was seen once again on May 23, when he felt quite well except for some dysuria and frequency of micturition; the mass had almost entirely disappeared. He was placed on a urinary antiseptic, and since he has not returned I expect that these symptoms have also disappeared.

In my opinion this was a case of bleeding beneath the rectus abdominis muscle, with a collection of blood between the rectus and the peritoneum. I believe that, due to the severe blow, a vessel in the lower part of the muscle was torn, and as the posterior sheath is absent in its lower part, the blood collected directly between the muscle and the peritoneum and set up the peritoneal irritation that almost caused us to operate for a possible intra-abdominal lesion.—I am, etc.,

Brooklyn, New York, May 27. A. JAY SNYDER.

British Hospitals in China

SIR,—In forwarding to you the enclosed letter, which is being addressed to all members of the medical profession and to the leading pharmaceutical manufacturers in this country, I would like to add a few notes.

When the Lord Mayor's Fund for the Relief of Distress in China first made its appeal to the public, it was realized by our central executive committee in Shanghai, under the presidency of the British Ambassador and the Governor of Hong Kong, that provision must be made for the application of funds for relief along three lines.

First: Cases where British residents in China are rendered destitute. These are being dealt with by the British Women's Association in Shanghai.

Secondly: The huge refugee problem. Here the application of relief is being carried out largely through the refugee camps of the International Red Cross Committees in Shanghai, Hankow, etc., through the Salvation Army workers in charge of rice, soup, and gruel kitchens, and through the international committees in charge of refugee zones, where hundreds of thousands of women and children have sought refuge. For all these homeless and destitute, money for food and over 1,000 bales of clothing have been sent to China.

Thirdly: The hospital work for wounded persons, both civilian and military. Here relief is being applied through the hospitals of the various missionary societies, which are working both in Chinese and Japanese controlled territory. Grants in money to enable existing hospitals to expand their bed capacity and over £18,000 worth of medical supplies have been sent out. In the

Central China area alone over twenty-six British hospitals have been helped to keep going.

But the war goes on, the wounding of civilians by aerial bombing is still more extensive, and by cable and letter the call comes for further medical supplies. One of the most glorious pages in the history of the profession is being written by our medical colleagues in China—many of them in isolated positions carrying on as the tide of war sweeps over them, and keeping their work going whether Chinese or Japanese are in control of the area in which they work. Surely the least that we who live in comfort and safety at home can do is to keep them supplied with the necessary medical stores, anaesthetics, antiseptics, dressings, drugs, and instruments without which they cannot carry on. Gifts of instruments in good condition will be welcome as well as the necessary money for purchase, and may be sent to me at 121, Westbourne Terrace, W.2.—I am, etc.,

H. GORDON THOMPSON.
Honorary Secretary and Treasurer,
Lord Mayor's Fund for the Relief of
June 2. Distress in China.

*** The letter enclosed by Dr. Gordon Thompson is in the following terms:

You will doubtless have read in the Press the news which has been coming through from the war areas in China, but it cannot give an adequate picture of the terrible sufferings of the people and the need for help at the present time. Large areas have been rendered desert by complete destruction of farms and villages. Enormous numbers of the population have been on the move, some seeking for safety and others in search of food. In a great many places the chance of a harvest either this year or next has gone, for farms are burnt, while beasts for ploughing, implements, and seed have all been destroyed.

A death rate in a refugee camp for the first few months was 380 per 1,000, to a large extent among the children, and this gives but a bare statistical picture of an incalculable amount of suffering and anguish, both physical and mental. With summer coming on epidemic diseases, such as cholera, relapsing fever, the dysenteries, and small-pox, are spreading, whilst food deficiency diseases such as beriberi are becoming rampant.

British hospitals, established by missions of all denominations, have been nobly endeavouring to do their part in meeting the need, and without a word of complaint they are being overwhelmed with the care of the sick and wounded. Since the early days of the struggle the Lord Mayor's Fund has sent out, apart from cash for starving refugees, about £18,000 of medical supplies and drugs to the hospitals, but these are now becoming exhausted, and we must stand by our medical colleagues in this their need. [The principal requirements are set forth in the appendix to this letter.]

Much has been given by doctors, chemists, and manufacturing firms. If you already have been approached for help we beg that you will not take it amiss if we make a further appeal, for, stimulated by the efforts of the few, we are now trying to reach everyone. We therefore confidently ask for your sympathy and active co-operation to do something for this mass of suffering. Goods in kind or money to buy drugs, dressings, or instruments will all be welcomed. We anticipate your sympathetic consideration and your active help. Donations of money and gifts in kind may be sent to, and cheques or postal orders made payable to: H. Gordon Thompson, M.D., F.R.C.S., Honorary Secretary and Treasurer, The Lord Mayor's Fund for the Relief of Distress in China, 121, Westbourne Terrace, London, W.2.

DAWSON OF PENN	JOHN KIRK
W. MCADAM ECCLES	W. T. LISTER
H. B. FAWCUS	EWEN J. MACLEAN
GEORGE GASK	LOUISE MCILROY
HORDER	JOHN A. RYLE
ROBERT HUTCHISON	CUTHBERT WALLACE
R. E. KELLY	D. P. D. WILKIE.

Assistance to Medical Students from Austria

SIR,—I think many of your readers will agree that the suggestion made in Professor J. A. Ryle's letter in the *Journal* of June 11 (p. 1286) is a little misguided. Surely sympathy and assistance should be extended in the first place to those refugees who are already practising the profession to which they have devoted their lives and who are now too old to take up another career, rather than to youngsters not yet embarked on a career. There are not enough free places in medical schools for our own nationals and every year there are prospective students who state that they can only begin medicine if they obtain a scholarship. Moreover the income of many medical schools depends to a considerable extent on grants from the Government and local authorities, and it is doubtful whether these schools have the moral right to expend, to the disadvantage of British students, money on the training of those who may not be capable of assimilation by the British Commonwealth. It has often been my experience when interviewing candidates for dental bursaries, in the days when these were enough to pay for the complete course, to elicit the information that the candidate was taking up dentistry merely because a free education was offered. Our medical schools are full already; why, then, should we encourage a further influx? If a case can be made out for any candidate of outstanding merit no doubt consideration should be given, but to ask every medical school to offer a free place is sympathy run riot. Furthermore, I cannot agree that by the time these students have qualified "the high figure for entry into the profession will have fallen off" because, as medical schools are still full, competition for posts at that time will be at a maximum.

With regard to the question of Austrian Jewish practitioners obtaining a "quick qualification in some University in this country," I do not think there is any University which will grant a medical degree under three years to any foreign graduate. There is, however, a licensing body whose diploma may be granted to foreign graduates after only one year, provided the necessary examinations are passed, and one gathers that this body is creating a certain amount of dissatisfaction not only in this country but in other parts of the British Empire because of the shortness of time in which its qualifications may be obtained.—I am, etc.,

G. A. CLARK,
Sheffield, June 11. Dean of the Faculty of Medicine.

Nutrition of Denmark During the War

SIR,—Most of what Dr. Johanne Christiansen tells in your issue of May 28 (p. 1174) about consumption of food in Denmark during 1918 is incorrect. There are various wrong assertions in her letter, but not to take too much space I shall only treat one: the high consumption of meat. It is correct that Dr. Christiansen has now succeeded in persuading the Danish Department of Statistics to make a calculation showing that the consumption of meat in 1918 was greater than the normal; but the truth remains that it was in fact far lower. The discrepancy is explained thus:

The Department of Statistics bases its calculations on the number of domestic animals, reckoning with a normal slaughtering of beasts of normal weight. Actually, the cattle were starving for lack of food and were often mostly skin and bone. Moreover, the farmers secretly slaughtered many small pigs for their own use. While this, of course, was illegal, the local authorities were unwilling to report their friends to the police. Consequently the farmers had enough

bacon while very little was available for other people. Bacon was in fact rationed—120 grammes weekly for each person—and even this amount often could not be had. No more than 200 grammes of beef was available at the normal price. If more was wanted, thrice the price had to be given. "Meat is so expensive," wrote a leading Copenhagen paper, "that common people cannot afford to eat it, even on Sundays." As this shortage of meat was on the verge of inducing revolt among labourers, the president of the Council for Nutrition reported to the Unemployment Committee that it was not possible to procure more than a third of the normal consumption of meat at the ordinary price.

Your readers may not find it easy to decide whom to believe. I venture to remind them that my experiments on a cheap plain Chittenden-like diet were started forty years ago and aroused so much interest that the Government granted me a laboratory for nutrition. When the blockade threatened us in 1917 with starvation, I was appointed counsellor of the Government and issued a pamphlet advising the public to live on a diet consisting mainly of wholemeal rye bread mixed with wheat-bran, potatoes, barley porridge, milk, a little butter, and very little meat and vegetables. Of this pamphlet 40,000 copies were distributed, and in 1918 I spent half my time travelling round the country giving instruction. In the discussions which followed my lectures I often heard housewives say: "That is all very well, but here we all live in accordance with your principles; we are compelled to do so." On these journeys I had ample opportunity to observe the underfeeding of cattle and its consequences. If anyone at that time had said that people were eating more meat than usual, the statement would have raised a laugh.

After living for forty years on the low-protein diet I do not feel old at 76. Last summer I travelled on cycle from one end of the country to the other, about 80 miles a day.—I am, etc.,

Copenhagen, May 29. M. HINDHEDE.

Identicalness of Finger-prints of Enzygotic Twins

SIR,—In a letter in the *Journal* of May 21 (p. 1142) I directed attention to the remarkable discrepancy in the opinions held by high medical authorities respecting the (alleged) identicalness, or total dissimilarity, of the finger-prints of uniovular twins, and solicited the opinions of those with special knowledge of the subject. I quoted Dr. Leonard Williams (*Minor Medical Mysteries*) to the effect that "not only their finger-prints but the whole of what is known as the 'friction surfaces' of their hands and feet are frequently found to be identical"; and, contrarily, Sir James Crichton-Browne's concurrence with the contention of Inspector Greville's that "in finger-print identifications the authorities never make a mistake. . . . It is impossible to make a mistake . . . even in twins the finger-marks are totally different."

I have had no reply, and still adhere to my opinion that neither the finger-prints of monozygotic twins nor of any other persons have ever been shown to be identical, despite the high authority of Dr. Leonard Williams, and despite the implied agreement with his statement by Professor J. B. S. Haldane, who writes in *The Inequality of Man*: "Their finger-prints are *generally* distinguishable, but those of the right hand of one of them are more like those of his brother's right hand than of his own left." My contention was (and is) that the finger-prints of monochorionic twins are *always* easily distinguishable by experts, and that it is impossible for these specialists to err.

This question may, however, be of such importance in criminology that it is clear that it is not to be decided on the opinion of any authority, however eminent, but upon the established facts of science. Chief Inspector Cherrill, the official in charge of the finger-print bureau at New Scotland Yard, courteously resolved the problem in the following communication, remarkable alike for its clarity and decisiveness:

"In reply to your letter dated May 30, I am directed by the Commissioner of Police of the Metropolis to acquaint you that the finger-prints of twins (including uniovular) are as dissimilar as those of other persons who are in no way related.

The fallacy that the finger-prints of twins are identical arises through the superficial examination of the prints by persons who are not finger-print experts.

It often happens that the finger-prints of twins are similar in pattern, but this is often the case with prints of any other persons. Finger-print identification, however, does not end with similarity of pattern, but is attendant solely upon the coincident sequence of the papillary ridge characteristics, and these have never been found to agree in prints taken of different fingers whether of the same person, twins, or any other persons."

According to Sir Francis Galton, the chances of any two finger-prints proving identical are less than 1 in 64,000,000,000. There is not any flaw in what has been known to experts for many years to constitute "the most infallible identification system in the records of criminology."—I am, etc.,

Liverpool, June 5. ROBERT COTTER.

"Spontaneous Human Combustion"

SIR,—The subject of spontaneous combustion apparently attracted the attention not only of the medical profession but of the laity one hundred years ago. In chapter I of *Jacob Faithful*, published in 1834, Captain Marryat gave a vivid account of the spontaneous combustion of the hero's mother. The following passages come from his description:

"The lamp fixed against the after bulkhead, with a glass before it, was still alight and I could see plainly to every corner of the cabin. Nothing was burning—not even the curtains to my mother's bed appeared to be singed . . . there appeared to be a black mass in the centre of the bed. I put my hand fearfully upon it—it was a sort of unctuous, pitchy cinder. . . . As the reader may be in some doubt as to the occasion of my mother's death, I must inform him that she perished in that very peculiar and dreadful manner, which does sometimes, although rarely, occur, to those who indulge in an immoderate use of spirituous liquors. Cases of this kind do indeed present themselves but once in a century, but the occurrence of them is but too well authenticated. She perished from what is termed *spontaneous combustion*, an inflammation of the gases generated from the spirits absorbed into the system."

Note that Captain Marryat quoted five of the six points mentioned by Dr. L. A. Parry (*Journal*, June 4, p. 1237): (1) The victim was a chronic alcoholic. (2) She was an elderly female. (3) In the cabin there was a lamp which might have occasioned the fire. (4) Little damage was caused to the combustible things in contact with the body. (5) There was a residue of greasy ashes. Captain Marryat did not mention that the hands and feet escaped combustion. Evidently there were doubts as to the origin of the fire, for "after much examination, much arguing, and much disagreement, the verdict was brought in that 'she died by the visitation of God.'"

One can picture the temperance fanatics making much of the phenomenon of spontaneous combustion and pointing out the foretaste in this world of the fate which awaits the drunkard in the next.—I am, etc.,

GAVIN THURSTON, M.R.C.P.

Clapham Common, S.W.4, June 8.

Atrophic Rhinitis

SIR,—I am indebted to Dr. James Adam (*Journal*, June 4, p. 1236) for calling my attention to the fact that in my article on the treatment of atrophic rhinitis (May 28, p. 1167) I did not make it sufficiently clear that patients with atrophic rhinitis are only susceptible to pulmonary tuberculosis. I did not mean to imply that tuberculosis was an aetiological factor. I cannot agree with Dr. Adam when he says that atrophic rhinitis is the result of undiagnosed sinusitis, and that the treatment of the sinusitis cures atrophic rhinitis. I have searched a large number of these cases for proof of sinusitis by antral puncture and by *x*-ray examination, and have not found any indication of sinusitis. In my opinion, and that of a large number of my colleagues, there is no aetiological connexion between the two conditions. The problem of atrophic rhinitis is much more difficult than the treatment of sinusitis. It is significant that true atrophic rhinitis has been much less common in recent years since the great improvement in the feeding and housing of the hospital class of patient. It is true that a pseudo-atrophic rhinitis does occur occasionally after severe operations for chronic sinusitis. I hope that Dr. Adam's letter will stimulate the continuance of the investigation of the aetiology of atrophic rhinitis and its relation, if any, to sinusitis.—I am, etc.,

London, June 13. EDWARD D. D. DAVIS.

Funeral Directors (Registration) Bill

SIR,—In your brief reference to the moving of the second reading of this Bill (*Journal*, June 11, p. 1287) you state that the motion was withdrawn. The motion was not withdrawn, but negatived, as the *Hansard* report correctly states. I shall be grateful if you can insert this letter in your next issue.—I am, etc.,

London, W.1, June 14. HORDER.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a congregation held on June 9 the following medical degrees were conferred:

M.D.—T. F. Fox, J. S. S. Fairley, G. Simon.
M.CHIR.—P. H. R. Ghey.
M.B., B.CHIR.—*C. G. Jobbins, R. D. Teare.
M.B.—*P. G. Levick, A. Innes, S. H. Barnett.

* By proxy.

UNIVERSITY OF LONDON

The entry fee for the M.B., B.S. examination under the revised regulations is £15 15s.—that is, £5 5s. for each of the three parts. Part I will be held for the first time in November, 1938, and Parts II and III in May, 1939.

The first two paragraphs of the regulations for the M.S. examination, Branch I (*Red Book*, 1937–8, pp. 289–90; *Blue Book*, September, 1937, p. 833) were amended to read as follows:

"A candidate for the degree of Master of Surgery, Branch I, must have taken the degrees of Bachelor of Medicine and Bachelor of Surgery in this University. The candidate must forward together with his entry form (1) a certificate of having held for at least two years an approved surgical appointment or appointments at a hospital with an associated medical school recognized for this purpose. In special cases the University is prepared to approve one year's whole-time appointment in a special surgical clinic at a non-teaching hospital as one of the two years' experience referred to above, and (2) a record of operations performed by him, signed by the surgeon or surgeons under whom he has worked."

The Senate on May 18 awarded the degree of Ph.D. in Biochemistry to A. E. Kellie (Lister Institute of Preventive Medicine).

The following appointments were made: Mr. Philip Turner to represent the University on the Educational Board of the British Social Hygiene Council; Dr. R. A. Young to represent the University at the twenty-fourth Annual Conference of the National Association for the Prevention of Tuberculosis, to be held in London from June 30 to July 2. It was reported that, as a matter of urgency, the Vice-Chancellor had nominated Dr. A. M. H. Gray and Mr. W. Girling Ball for appointment to represent the University on the Council of the London (Royal Free Hospital) School of Medicine for Women. Sir Cooper Perry has been appointed representative of the University on the governing body of the Battersea Polytechnic Training School for 1938–9.

Lieutenant-Colonel H. E. Shortt has been appointed to the University Readership in Medical Parasitology tenable at the London School of Hygiene and Tropical Medicine, and is assigned to the Faculties of Medicine and Science.

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*‡W. H. J. Baker, *†K. P. Ball, *†J. P. Bentley, *§A. J. Bernfeld, *†‡¶I. M. Hall (University Medal), *†L. A. Ives, *§T. Parkinson, *§W. M. L. Turner, Sheila M. Anderson, Evelyn G. Ashton, C. E. Aston, A. H. Bacon, Janet E. Bottomley, C. M. Bowker, Katharine M. H. Branson, F. J. Brice, K. P. Brown, J. C. McC. Browne, Marjorie G. Bryan, J. A. Chamberlin, L. J. Clapham, E. M. B. Clements, J. W. C. Cochrane, A. Cohen, A. L. Collins, H. Cooper, Frances M. Cox, R. V. Coxon, W. V. Cruden, Eleanor Davies-Jones, E. C. Dax, J. de Swiet, Nancy K. Dick, J. H. Dobree, E. G. Dolton, Cecile R. Doniger, J. J. Dubash, Gertrude L. E. Dudderidge, Avis M. Dyer, D. F. Eastcott, G. F. Edwards, T. K. Elliott, Winifred M. Emmet, P. G. Epps, G. A. Fairlie-Clarke, D. W. Fell, W. B. Foster, Audrey U. Fraser, E. D. B. Freedman, A. S. Garrett, Edith Gilchrist, B. F. B. Gulliver, H. E. Hobbs, M. A. Imray, J. G. H. Ince, Stella M. Instone, H. Jackson, S. Jackson, Ursula James, E. Japha, T. H. Jenkins, R. C. Jenkinson, P. H. Jobson, E. C. Jones, G. B. Jones, J. M. Jones, J. H. H. Keall, H. A. Kelsey, J. W. L. Kemp, B. W. Lacey, L. P. Lassman, J. D. Laycock, J. A. Lewis, B. G. A. Lilwall, E. L. Loewenthal, W. H. McDonald, Norma M. MacLeod, Constance A. Mallett, A. D. Messent, Agnes M. D. Milne, D. N. B. Morgan, D. W. Moynagh, G. M. Müller, F. L. E. Musgrove, W. M. Owen, Eileen B. Palmer, W. M. Philip, Frances J. Pounds, K. W. Powell, K. J. Powell, R. E. A. Price, Dorothy M. Pritchard, S. H. Raza, E. G. Reynolds, R. Rhydwen, Gwen Richards, H. J. Richards, Mary C. Rowe, S. T. Rutherford, J. M. Smiles, D. J. N. Smith, K. Smith, F. E. Stock, Alizon F. Stookes, B. D. Stutter, N. G. G. Talbot, K. H. Taylor, I. E. J. Thomas, P. Tomlinson, Eileen W. Town, G. C. Tresidder, Ivy M. Tuck, D. M. Wallace, H. P. Watts, J. C. Watts, Aileen E. M. Whetnall, D. I. Williams, T. G. Williams, A. D. Willis, A. R. Wood. *Group I:* B. S. S. Acharya, J. D. F. Armstrong, E. A. Atkinson, R. G. Bartelot, C. A. Bathfield, K. M. Bhansali, W. E. W. Bridger, A. A. G. Clarke, J. C. A. L. Colenbrander, J. H. L. Conway-Hughes, A. H. Cutting, A. P. Dale-Russell, A. S. Dods, A. M. Edwards, J. A. P. Evans, R. W. Evans, C. G. Fagg, W. Fine, H. Foster, Ysobel M. Garland, S. Garnjana-Goonchorn, G. N. L. Godber, L. J. Grant, L. A. T. Hamilton, S. R. T. Headley, R. N. Herson, C. W. Horncastle, N. C. Horne, S. T. H. Jenkins, C. C. Kirby, R. P. Lawson, C. V. Lewis, E. M. Lloyd-Davies, S. Locket, V. D. Logue, M. C. W. Long, Elizabeth C. Marshall, I. J. Mathias, P. S. Meyrick, G. S. Moore, J. N. M. Parry, K. G. Pascall, Nancy Perry, Gloria H. Platt, A. B. Pollard, Nancy E. Robbins, Margaret D. Snelling, C. J. Stewart, R. L. Thompson, D. C. Tomlins, P. E. R. B. Unwin, F. H. Vieyra, Betty Walker, M. H. G. White, R. A. White, R. J. Whiting, Nona E. Wright. *Group II:* W. E. Clarke, Dorothy L. Crossley, D. G. Evans, E. O. Evans, C. C. Evill, D. S. Foster, M. Halberstaedter, Violet E. N. Harris, Mary C. Hopper, Doreen Jamieson, P. H. Jayes, Ruth Jones, G. Kruatrachue, R. J. H. McMahon, S. W. Maxwell, M. T. Read, H. M. Rice, K. S. Richard, R. B. K. Rickford, D. K. Sambrook, J. R. Simpson, D. A. Skan, G. R. Staley, K. B. Thornton, J. W. Warrick, W. R. W. West-Watson, R. F. Wyatt.

* With honours. † Distinguished in Medicine. ‡ Distinguished in Pathology. § Distinguished in Forensic Medicine and Hygiene. ¶ Distinguished in Surgery.

UNIVERSITY OF SHEFFIELD

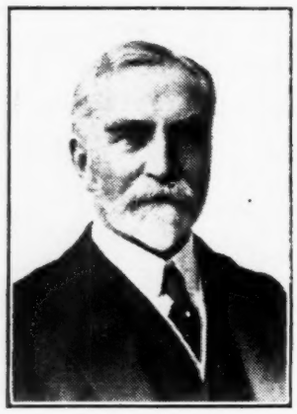
At its meeting on June 10 the Council appointed Professor G. A. Clark, M.D., the representative of the University on the General Medical Council.

The Council accepted, with regret, the resignation of Dr. Duncan Cameron of the post of honorary demonstrator in anatomy and accorded him its thanks for his services to the University.

Obituary

JAMES CHAMBERS, M.D., M.Ch.

By the death of Dr. James Chambers, at his residence in Highdown Road, Roehampton, the medical profession, and especially the Royal Medico-Psychological Association, has lost one of its outstanding members. His early life was at Belfast. He took the M.A. of the Royal University of Ireland in 1882, the L.R.C.P.I. in 1885, was senior scholar, first medical scholar, and Dunville Student at Queen's College, Belfast, and won the first medical exhibition of the Royal University of Ireland. For many years he was the resident physician to The Priory, Roehampton. He became an ordinary member of the Royal Medico-Psychological Association in 1882, was assistant editor of the *Journal of Mental Science* in 1900–5, and co-editor 1905–14. He was president in 1913–14, and treasurer during the period 1917–31; his presidential address was "On the Prevention of the Insanities."



Dr. Chambers was formerly lecturer on mental disease at the Middlesex Hospital Medical School, became consultant in mental disease to the London military hospitals, and physician to the special hospital for officers at Latchmere House, Ham Common. He had been a member of the British Medical Association since 1887, and when the Association held its Annual Meeting in London in 1895 he acted as honorary secretary of the Section of Psychology, and in 1901 he was vice-president of the Section of Psychological Medicine at the Cheltenham Meeting

Since his retirement from The Priory a few years ago Dr. James Chambers had been gradually failing in health, and at last passed peacefully away on June 7. The deepest sympathy is expressed to Mrs. Chambers and her sons and daughters. To those of us who were familiar with his kindness and constant care for patients under his treatment at The Priory it is a great sorrow that Dr. Chambers should have passed away after such a long and trying illness, always borne with the greatest fortitude.

R. PERCY SMITH.

V. H. WYATT WINGRAVE, M.D.

The death of Dr. Vitruvius H. Wyatt Wingrave took place at Lyme Regis on June 1, just two days after his eightieth birthday. His was an example of indomitable will-power over a very prolonged period of chronic illness. Added to this after some attacks of Ménière's symptoms he became stone deaf. I remember him pathetically telling me he would never hear his children's voices again. Furthermore, he was attending an out-patient in the Central London Throat, Nose and Ear Hospital and while her throat was being examined the patient accidentally coughed violently in his face, setting up an acute inflammation in one of his eyes which left him permanently blind in that eye. He retired to Lyme Regis in 1920.

He was born in Coventry in 1858, the son of Joseph Wingrave, a chemist, and Jane, daughter of James Wyatt of Leamington. He married three times and leaves two sons and a daughter by his second wife. He was educated at Coventry Grammar School and at the Middlesex Hospital, taking the L.S.A. in 1882, M.R.C.S. in 1886, and proceeding to the M.D. Durham in 1900. He became lecturer in physiology at Cooke's School of Anatomy, which position he held for twenty-five years. After passing through various posts in the Central London Throat, Nose and Ear Hospital, he eventually found a congenial home in the hospital's pathological laboratory. The fact of the matter was that his complete deafness terribly handicapped him in his profession. It was also a constant danger to him, and twice when crossing the street unattended he was run over: on one of these occasions I was summoned to attend him, and I came away with the impression that he bore a charmed life, for anyone else would most probably have been killed. In the pathological laboratory he did excellent work and some special research work on the connexion between tuberculosis and nasal disease. He became also pathologist to the Medical Graduates Club and President of the British Laryngological and Otological Association. He was a Fellow of the Palaeontographical Society, and in 1928 presented to the Royal College of Surgeons Museum specimens showing rheumatoid disease in extinct saurians. He was an original thinker, and was in many ways an extraordinary man. Being an omnivorous reader with a colossal memory his knowledge became encyclopaedic and there was hardly a subject in science or art with which he was not intimately conversant, and he would enter into any discussion with a scholar's knowledge and enthusiasm. I remember when one of my sons and I were paying him a visit at Lyme we were one day standing with him on the Cobbe and watching cartloads of ballast being removed from the beach to the Cobbe for purposes of strengthening the sea's defences. He had been talking about Monmouth's rebellion and had pointed out that the place on the beach from which they were removing the stones was the very place where they had erected a gibbet for hanging the rebels. At that moment he stooped down and from some of the rubble picked up—a human patella! It looked for all the world as if it were to corroborate what he had been saying.

On January 13 of this year Dr. Wyatt Wingrave was presented with the honorary freedom of Lyme Regis, but on account of his illness the Mayor, with a little speech, was obliged to hand him the scroll in his study. That this honour was to be paid the *Times* (November 10, 1937) had already given notice. Dr. Wingrave had been the founder of, and honorary curator to, the Lyme Regis Museum for ten years, until ill-health had prevented him from continuing. He had taken the keenest interest in the geology of the district and he discovered a rare form of ammonite and was the first to describe it. Scientists courteously gave it the name of *Oxyoceras wingravii*. Dr. Wingrave had previously received the freedom of his native city—Coventry. The funeral service took place at Coventry Cathedral on Saturday, June 4, and a memorial service was held at St. Michael's Church, Lyme Regis, on June 6.

T. WILSON PARRY.

The unexpected death on May 31, at the age of 59 years, of Dr. WILFRED ALEXANDER STEEN removes from the medical community of Ilford and district a practitioner of unusually wide repute, a colleague of unswerving loyalty, and a character distinguished by its generosity and broad humanity. The youngest son of the Rev. George Steen of Keady, Co. Armagh, Wilfred Steen came

to London at an early age, and started immediately his medical course at the London Hospital, qualifying before he had reached the age for admission to the *Register*. Undoubtedly he received in these early years material encouragement from his eldest brother—James Ross Steen—who was already well established in practice, first in Poplar and later in Ilford, where Wilfred ultimately joined him. The two brothers were gifted with a rare clinical instinct and a faculty for organization, and these combined with an assiduous application to work resulted in their building up a practice of unusual dimensions. Ross Steen died in January, 1934, and was at the time of his death the senior practitioner in Ilford; and now Wilfred Steen—probably claiming a similar distinction in point of seniority—passes from our midst, mourned not only by a number of colleagues intimately associated with him in practice, but by the local medical profession as a whole, to many of the younger members of which he extended valuable help and encouragement. His death will also be much regretted by a host of patients, and a large circle of friends to whom he was affectionately known as Wilfred. His friends will always cherish memories of his unstinted generosity, a generosity equalled only by his invigorating sympathy as a doctor. Those who knew him most intimately at work marvelled at his patience, and his ability to deal with a difficult situation by his timely joke and by the "soft answer which turneth away wrath." It had often been said of him that he was never heard to give expression to an unkind word about anyone, and this tribute was paid to him on one of the two occasions when he held in consecutive years the presidency of the Ilford Medical Society. There are many who will have a sense of personal loss in the passing of so genial a personality. He had been a member of the British Medical Association since 1910. To his widow and their son Pat—not long started his curriculum as a medical student—there will be a volume of sympathy in their great bereavement.

J. A. M.

Medical Notes in Parliament

Epidemics of Milk-borne Diseases

On June 1 the Ministry of Health circulated statistics on epidemics of milk-borne disease from 1933 to 1937, as under:

Place	Year	Disease	Notifications	Deaths
Hyde	1933	Scarlet fever ..	43	4
W. Hartlepool ..	1933	Paratyphoid B	24	1
Epping	1933	Paratyphoid B	22	None
Chelmsford.. ..	1935	Scarlet fever ..	487	6
Eton	1935	Scarlet fever ..	100	2
Kettering U.D. and surrounding district	1936	Enteric (cream cakes thought to be vehicle)	9 cases in U.D and 23 in district	1 death among the 9 U.D. cases. Deaths in district not stated
Bournemouth, Poole, and Christchurch	1936	Enteric ..	718	51 among the residents. No information as to visitors
Doncaster	1936	Scarlet fever and tonsillitis	135 cases of scarlet fever; 229 of "sore throat"	2 deaths "definitely associated with the outbreak"
Wilton (Wilts) ..	1936	Gastro-enteritis	About 100 (disease not notifiable)	None

Pensions for the War-Disabled

On the motion for the Whitsuntide adjournment Mr. TINKER opened a debate on the treatment of ex-Service men. He asked that a psychologist should be called in to examine claimants, and he criticized the treatment of pensions appeals.

After discussion Mr. RAMSBOTHAM said "the war-disabled man" meant the man in respect of whom there was reasonable evidence that the disablement had a war origin. In appeal cases the independent medical expert was generally a Harley Street physician or surgeon who did the work at a small fee and performed a great service for the country. In most cases the expert did not want to see the man, because the question was not one of diagnosis but of the perusal of all the documents in the case and of the war service records. The independent medical expert had to decide whether there was reasonable evidence to connect the present condition of the man with the war service shown on his records. This must be primarily a medical decision. If he induced the medical advisers of the Ministry to relax their medical examination and their standards of evidence, the pensions system of the country would never recover.

Venereal Disease Clinics.—Mr. GALLACHER asked on June 2 whether the remuneration of medical officers in attendance at venereal disease clinics in London was fixed on the basis of the number of attendances per medical officer. Dr. ELLIOT, in reply, said he was informed by the London County Council that the remuneration of medical officers at clinics at present participating in the venereal diseases scheme for London was not determined on the basis indicated. Mr. GALLACHER further asked whether the monetary grants made to venereal disease clinics in the London area were made in proportion to the total individual attendances in the course of a year instead of to the number of patients treated. He suggested that this was calculated to lead to over-treatment, "which in these diseases could be almost as dangerous as no treatment." Dr. ELLIOT said he was informed by the London County Council, by whom the payments were made, that the number of attendances was only one of many factors taken into consideration in determining the amounts of the payments. The question of altering the basis of the grants did not therefore arise.

Mr. GALLACHER, on June 2, asked what were the circumstances in which St. Paul's Hospital lost its grant of £8,000 from the London County Council leading to its having to close down several wards, and why no public inquiry was held into the events which led to this action being taken. Dr. ELLIOT answered that the grant referred to was payable by the London County Council to St. Paul's Hospital in pursuance of arrangements made annually between the county council and the hospital for the diagnosis and treatment of venereal diseases. In reviewing their venereal diseases scheme for the year 1937-8 the county council decided that it was no longer necessary to continue the arrangements with St. Paul's Hospital. The discontinuance or renewal of such arrangements was a matter within the discretion of the county council.

Blood Tests for Paternity.—Answering, on June 2, a suggestion by Sir Ernest Graham-Little that magistrates should be informed by circular of the validity and value of blood tests, Sir SAMUEL HOARE said further action on his part was not called for. The courts were aware of the value of these tests.

Notes in Brief

The service of salaried midwives under the Midwives Act, 1936, may now be said to be in effective operation throughout England and Wales, though there is a small number of areas in which the local authorities have not finally completed their arrangements with other bodies.

The Secretary of State for Scotland is considering the report of the committee of inquiry appointed to examine the request submitted by the Scottish Universities for a grant from the Education (Scotland) Fund, and hopes to announce a decision at an early date.

The numbers of insured men and women in Great Britain between the ages of 55 and 65 at January 1, 1938, were about 1,500,000 and 400,000 respectively. Of these about 105,000 men and 50,000 women were then in receipt of disablement benefit.

Of 176,466 houses affected by slum clearance orders, 104,000 had been abolished by the end of 1937.

No. 22.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 4, 1938.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for : (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns (123 in 1937) in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns (9 in 1937) in Northern Ireland.

A dash — denotes no cases ; a blank space denotes disease not notifiable or no return available.

Disease	1938					1937 (Corresponding Week)					1929-37 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	29	2	13	5	1	17	—	10	1	—		
Deaths		1	1				1	—				
Diphtheria	986	139	149	56	28	925	119	192	40	21	921	147
Deaths	24	2	6	2	—	29	4	4	2	—		
Dysentery	52	18	72		—	33	4	12		—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	1	—	1	1	—	5	—	—		—		
Deaths		2					1					
Enteric (typhoid and paratyphoid) fever	31	4	16	1	—	39	5	6	10	1	39	—
Deaths	1	—	—	—	—	1	—	—	—	—		
Erysipelas			71	6	3			44	5	1		
Deaths		—					1					
Infective enteritis or diarrhoea under 2 years												
Deaths	42	15	12	9	4	46	13	11	6	2		
Measles			271		16*			198		1		
Deaths	20	7	10	4	1	7	—	1	—	—		
Ophthalmia neonatorum	117	22	27		1	115	13	29		—		
Deaths												
Pneumonia, influenzal §	919	72	3	3	32	652	40	11	3	4	837	70
Deaths (from Influenza)	38	8	1	—	—	17	4	5	1	1		
Pneumonia, primary			240	11				203	11			
Deaths		16		14	10		16		11	11		
Polio-encephalitis, acute	—	—				1	—					
Deaths		—					—					
Poliomyelitis, acute	5	2	4		—	3	2	—		—		
Deaths		—					—					
Puerperal fever	7†	7	13	5	1	33	8	18	1	1		
Deaths		—					2‡					
Puerperal pyrexia	172	24	26		2	124	18	29		1		
Deaths												
Relapsing fever	—	—			—	2	—	—		—		
Deaths												
Scarlet fever	1,967	188	396	103	91	1,517	146	368	116	38	1,804	212
Deaths	6	1	3	—	—	—	—	4	1	1		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—		—		—	—		
Typhus fever	—	—	—	—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough			102		18			232		6		
Deaths	13	2	2	2	—	16	6	8	2	—		
Deaths (0-1 year)	318	61	81	41	19	305	55	74	31	19		
Infant mortality rate (per 1,000 live births)	53	50				50	46					
Deaths (excluding stillbirths)	4,504	849	616	185	119	4,188	800	591	174	133		
Annual death rate (per 1,000 persons living)	11.1	10.8	12.5	12.5	10.5	10.4	10.1	12.1	11.9	12.7		
Live births	7,083	1,349	989	352	290	7,275	1,410	974	346	270		
Annual rate per 1,000 persons living	17.4	17.2	20.1	23.8	25.7	18.0	17.8	19.9	23.6	25.8		
Stillbirths	310	51				313	52					
Rate per 1,000 total births (including stillborn)	42	36				41	36					

* 7 cases in Belfast alone.

† After October 1, 1937, puerperal fever was made notifiable only in the administrative county of London.

‡ Deaths from puerperal sepsis.

§ Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

EPIDEMIOLOGICAL NOTES*

Small-pox

On June 9 a case of small-pox was reported at Gravesend and admitted to the Isolation Hospital. In recent weeks 2,000 people in the town have been vaccinated.

During the week ended June 4 there were 12 (9) cases of small-pox with 10 (10) deaths reported in Hong Kong. During the same week 5 cases with 3 deaths were notified in Burma, 52 (67) cases with 44 (53) deaths in Calcutta, 272 (291) cases with 55 (55) deaths in the Presidency of Bombay, 56 (38) cases with 14 (7) deaths in the Presidency of Madras, and 92 (130) cases with 15 (20) deaths in Sind. In Indo-China in the same week 85 cases of small-pox were reported in Tonking and 4 in Hanoi.

Enteric Fever

During the week under review there were 31 notifications of enteric fever in England and Wales, compared with 17 in the previous week: of these 4 (2) were in London—1 each in Bethnal Green, Islington, Kensington, and St. Pancras. In Scotland 16 cases of enteric fever were notified—2 more than in the previous week; 13 were cases of typhoid fever, 7 of which occurred in Roxburgh County belonging to the Hawick outbreak, 4 (1) in Glasgow, and 1 each in Ayr County and Perth and Kinross County. There were no deaths from enteric fever in Scotland during the week.

Diphtheria and Scarlet Fever

In England and Wales notifications of diphtheria during the week under review dropped from 1,002 to 986, while in London they rose from 128 to 139. There was a marked drop in notifications for Scotland, and considerable increases were noted in Eire and Northern Ireland. Deaths in the 126 Great Towns of England and Wales fell from 29 to 24, and in London from 5 to 2. Of the 24 deaths from diphtheria recorded in the 126 Great Towns 4 each occurred in Liverpool (2) and South Shields (0). There were 6 deaths from diphtheria in Scotland during the week under review—the same number as the previous week—3 of which occurred in Glasgow (5) and 1 each in Edinburgh (1), Clydebank (0), and Ayr (0). There was a fall in the notifications of scarlet fever in England and Wales during the week—2,048 to 1,967—and in London from 218 to 188; the figures for England and Wales were slightly in excess of the median value for the last nine years, but for London they were appreciably less. In the Great Towns of England and Wales 6 deaths were recorded from scarlet fever, compared with 3 in the previous week, while in London the number was the same—namely, 1; in Scotland there were during the week 3 (0) deaths from scarlet fever. Notifications in Scotland rose from 362 to 396, while in Eire they fell from 112 to 103, and in Northern Ireland from 114 to 91.

Primary and Influenzal Pneumonia

Notifications of primary and influenzal pneumonia were lower both in England and Wales and in London for the week under review than they were in the previous week—919 as against 1,082 in England and Wales, and 72 as against 82 in London; both these figures, however, are in excess of the median values for the last nine years. Fewer deaths from influenza were reported in England and Wales, London and Scotland during the week. In the West Riding (Yorks) 107 (140) cases were notified, of which 35 (44) were in Sheffield, 19 (24) in Leeds, and 18 (12) in Bradford. In Warwickshire there were 59 (61) cases, of which 36 (36) were in Birmingham. Of the 180 (186) cases reported in Lancashire 53 (49) were in Liverpool and 43 (42) in Manchester. There were 38 deaths from influenza in the 126 Great Towns of England and Wales during the week; of these 5 (2) were in Birmingham, and 3 each in Liverpool (1) and Manchester (2). In Scotland 240 cases of primary pneumonia were notified, compared with 246 in the previous week; there were 3 cases of influenzal pneumonia (6 more than in the previous week) and 1 death, which occurred in Coatbridge. In Eire there were 14 deaths from pneumonia, of which 8 (9) were in Dublin and 2 (2) in Limerick. There were 10 (13) deaths from pneumonia in the ten principal towns of Northern Ireland during the week, 6 (11) in Belfast and 2 (1) in Portadown, and 1 each in Londonderry (1) and Lurgan.

Measles and Whooping-cough

In the 126 Great Towns there were 20 deaths from measles, compared with 16 in the previous week; of these, 7 (6) occurred in London, and 1 each in Acton, Brentford and Chiswick, Enfield, Tottenham, Barnsley, Kingston-upon-Hull, Leeds, Newcastle-upon-Tyne, St. Helens, Sheffield, Stockton-on-Tees, Exeter, Rhondda. During the week 812 cases were reported from the L.C.C. elementary schools, compared with 949 in the previous week. The average daily admissions to the L.C.C. fever hospitals were 31, compared with 46 in the previous week, and the number of cases of measles under treatment in these hospitals on Friday, June 3, was 1,171, compared with 1,282 on May 27. On the same day there were under treatment in the L.C.C. fever hospitals 1,012 (1,009) cases of diphtheria, 824 (841) cases of scarlet fever, 259 (272) cases of whooping-cough. Notifications for the week ended June 4 in the eleven metropolitan boroughs in which measles is notifiable were 341 (460), distributed as follows: Battersea 14 (45), Bermondsey 8 (20), Finsbury 13 (35), Fulham 23 (55), Greenwich 96 (104), Hampstead 28 (18), Lambeth 61 (45), St. Pancras 36 (74), Shoreditch 18 (20), Southwark 14 (23), Stepney 30 (23). In Scotland 271 cases of measles were notified, compared with 380 in the previous week; the figures for Glasgow were 65 (123), Dundee 68 (65), Kirkcaldy 43 (37), Lanark County 30 (45), Falkirk 25 (38), Edinburgh 17 (13), Aberdeen 14 (44). During the week there were 10 (11) deaths from measles in the 16 principal towns of Scotland: of these, 4 (5) occurred in Dundee, 2 (4) in Glasgow, and 1 each in Aberdeen (2), Paisley (0), Greenock (0), Coatbridge (0). In Northern Ireland there was 1 death from measles, in Londonderry County Borough; and in Eire there were 4 deaths, all in Dublin.

In England and Wales there were 13 (11) deaths from whooping-cough during the week under review, of which 2 (3) occurred in London. In Scotland 102 cases of whooping-cough were notified, compared with 80 in the previous week, while the deaths remained at 2—1 each in Glasgow and Kirkcaldy. In Northern Ireland 18 (16) cases of whooping-cough were notified with no deaths, compared with 5 deaths in the previous week.

Cholera

During the week ended June 4 13 cases of cholera were notified in Shanghai, and 2 cases with 1 death in Hong Kong. In the same week in Burma 11 (6) cases with 6 (4) deaths were reported, in Calcutta 122 (102) cases with 37 (55) deaths, in Bombay 16 (9) cases with 4 (3) deaths, in Delhi 42 (41) cases with 19 (31) deaths, in Cawnpore 13 (2) cases with 5 (4) deaths, in Allahabad 2 (2) cases with 2 (1) deaths. In Indo-China during the same week 162 cases were reported in Annam, 375 cases in Tonking, 35 cases in Hanoi.

Plague

During the week ended June 4 there were 4 cases of plague with 8 deaths reported in Burma; in British India in the same week 3 cases with 2 deaths were notified in Bombay (Presidency) and 2 cases with 1 death in Madras (Presidency).

Typhus

During the week under review 2 cases of typhus were reported in Alexandria, and 11 in Cairo; in Palestine in the same week 2 cases were notified—1 each in Haifa

* Except where otherwise mentioned figures in parentheses refer to the week preceding the one under review.

and Jaffa. During the previous week—that is, week ended May 28—185 cases with 21 deaths were reported in Morocco, mainly distributed as follows: Chaouia, 45 cases, 6 deaths; Marrakesh, 36 cases, 6 deaths; Oued Zem, 35 cases, 6 deaths; Rabat, 24 cases, 2 deaths; and 9 each in Casablanca and Dukkala. During the same week in Tunisia there were 78 cases of typhus notified, mainly distributed as follows: Tozeur 21, Susa 16, Sukel-Arba 12, Gafsa 10. During the week ended May 14 136 cases of typhus with 7 deaths were reported in Poland, distributed mainly as follows: Wilno, 34 cases, 1 death; Stanislawow, 26 cases, 2 deaths; Lwow, 16 cases, 1 death; Wolhynia, 16 cases, 1 death; Nowogrodek, 12 cases; Warsaw, 9 cases. During the week ended May 7 in the United States of America 32 cases of typhus were notified—Georgia 11, Florida 9, Texas 8, and 2 each in Alabama and North Carolina.

Medico-Legal

A FRAUDULENT CONCERN EXPOSED

Medical men in this country who have suffered from the predatory activities of what the Americans term the "book agent" will be interested in the resounding defeat in India of a Mr. M. S. Cohen, sole proprietor of the "Dominion Research Foundation."

A gentleman who claimed that he had been defrauded by Mr. Cohen's concern into paying Rs.125 in instalments brought a successful action* in the court of the principal city civil judge of Madras and asked for his money back. The evidence showed Mr. Cohen's methods very clearly. An agent visits the victim and says he represents the "Dominion Research Foundation," which has been started to link up the research which scholars are doing all over the world and which hitherto has been largely uncoordinated. The "Foundation," he says, is a society which has as its members eminent physicians, scientists, and scholars all over the world. Membership is open to certain selected persons—of whom the "prospect" is naturally flattered to be considered one—and a member has the benefit of the pooled research of all the others. This is contained in the "New Educator Encyclopaedia," which is kept up to date by a quarterly extension service. The agent's proposal is that the "prospect" shall join the "Foundation" and receive the ten volumes of the encyclopaedia as a free gift. For the sum of Rs.250, payable in instalments, the member is supposed to receive the quarterly extension service for ten years, with loose-leaf binders, and the benefits of membership of the "New Educator Bureau of Research" for the same period. These benefits are the "educational benefits and privileges of the Bureau for research and special information," and an answer to one inquiry a week on any subject within the scope of the encyclopaedia. The member undertakes to give his unbiased opinion on the value of the encyclopaedia and service. If the fish bites, the agent produces a blue form and a white card. The card says, "I will accept one of your complimentary sets of the New Educator Encyclopaedia and agree that after delivery of same to me I will give you my unbiased opinion of the value of the said reference work and service." Even if the "prospect" signs the card the matter goes no further unless he also signs the blue form. Under this he agrees to buy the encyclopaedia, and becomes entitled to certain services. A white form is also shown, but it is never used. It gives the price of the encyclopaedia as Rs.210 and the price of the services at Rs.33 a year for ten years, a total of Rs.540. Its only purpose would appear to be to make members think they are getting special terms, as selected people, under the blue form. On the back of the form a paragraph says that much of the value of the extension service and the research privileges for which the member has been enrolled will come from his personal relationship with the "Foundation," and requests his help in "tying the service as closely to his personal and business problems as possible."

Having imprudently signed the contract, the victim duly gets his encyclopaedia. If he has any discrimination in these matters he will be seriously disappointed, for it has very little relation to scientific research. Except for its front page, which has been changed to bear the name "Dominion Research Foundation," it is merely a work called the "American Educator," which was prepared for school children, especially in America. The information is meagre, elementary, and often quite inaccurate. The quarterly supplements, which are to be filed in the loose-leaf binders, have nothing to do with the encyclopaedia and are mere journalistic matter. Like the encyclopaedia itself, they come *en bloc* from Chicago, and they bear the title "World Topics Quarterly, Loose Leaf Extension Service: a condensed record of important events and developments of special interest throughout the world," with the name of United Educators, Inc., Chicago.

The quality of the answers to the one question a week which a member is allowed was not tested by the plaintiff in this action, as he asked no questions. A witness from the "Foundation" said that one Dalal of Bombay, who had become a member in 1935, had been constantly asking questions and that the "Foundation" had spent Rs.3,500 in obtaining opinions for him; that one Pushparaj had asked three questions, the answers to which had cost Rs.5 each, and that one Hansotia had also asked a large number of questions. He stated that opinions were being obtained from prominent people like Mr. Alfred Topham, K.C., Mr. Susil C. Sen (a lawyer) of Calcutta, and others. The judge could not find from this evidence that the concern was seriously engaged in obtaining opinions and advice for its members, and he was inclined to believe the suggestion that the three inquisitive members had some sort of understanding with the company and that their inquiries were merely so much eye-wash.

The judge was impressed by a clause in the blue form, "This agreement is not subject to cancellation and will not be affected by any representations, warranties, or stipulations not endorsed hereon." Such a clause, of course, can never have legal effect, and, to quote the judgment, "the very existence of the clause is clear evidence of the scheme being fraudulent." Taking all the circumstances into consideration, the judge found that the entire scheme was conceived and planned in fraud and carried out by fraud. There was no society, body of persons, or institute—only Mr. M. S. Cohen. There was no research staff, merely a few clerks in an office in Calcutta, peddling some worthless books and pamphlets. The judge found the evidence wholly insufficient for him to hold that the "Dominion Research Foundation" had any connexion with any scheme, fraudulent or otherwise, in England or elsewhere. Nevertheless, it bears a strong resemblance, in form and method, to a concern to which we have from time to time referred in these columns and to which we shall refer again if necessary.

* Thiruvenkatachari *v.* Cohen, 1937/420.

IMPULSE AND INSANITY

The law on insanity and criminal responsibility is blamed for many injustices, by which persons whose crime is obviously due to mental disorder are punished as though they were fully responsible. A difficult problem may also, however, be created by the medical view of a criminal's mental state.

Mr. Justice Humphreys had before him at the Old Bailey on May 19 a man of 40 named O'Sullivan, who pleaded guilty to the attempted murder of a small boy in Epping Forest. The man had got into conversation with the boy, pulled a piece of string tightly round his neck, and gone away. He had then telephoned to the police saying he had found a boy in the forest who had been suffocated. The police found the lad semi-conscious and rescued him, and O'Sullivan later gave himself up. He had had five previous convictions,

had been given ten years' penal servitude at the Old Bailey in 1923 for wounding with intent to murder, and later had been sent to Broadmoor. Dr. Grierson, medical officer at Brixton Prison, said that the prisoner had been certified insane during his sentence. While in Broadmoor he had, it was understood, suffered from delusions. He thought he had to murder young children, especially those whose parents could not bring them up properly, in order to ensure their eternal salvation. After leaving Broadmoor he had been sent to Banstead Mental Hospital, and was discharged in 1935. Dr. Grierson said he thought O'Sullivan invented his delusions to avoid imprisonment. He seemed quite unable to find his feet and rehabilitate himself, and would perhaps sooner be in a mental hospital than at large. He would not certify him as insane on the available evidence. The judge suggested that the desire to be in a mental hospital seemed an odd reason for attempting to murder a boy, and asked whether he could not go in at any time as a voluntary patient. Dr. Grierson agreed, but said he would not be there very long.

The Judge's Comments

The judge remarked that O'Sullivan was an extremely dangerous person to be at large and ought to be shut up in a lunatic asylum rather than in prison. It was one of those cases which gave a great deal of trouble to those who had to sentence prisoners who admitted their guilt. It was difficult to understand why the prisoner had committed the act, but the act was plain. Sentencing the prisoner, he said that O'Sullivan had been let loose on society and, whether as a result of his discharge or not, had committed the second act. He did not want to treat the prisoner as he would a vicious criminal like an armed burglar; but, as he had no power to send him to a lunatic asylum, he could only send him to prison. If it were there found that he ought to be detained in some mental institution rather than in a place of mere punishment, the authorities had ample power to take the necessary steps. All the judge could do was to ensure that for a period of years O'Sullivan could not attempt to murder someone else through his impulse, whether it arose from criminality or insanity.

The published report of the case[1] suggests that the prisoner was a psychopath and that the medical officer's difficulty arose from the tendency of a certain type of patient to show his insanity intermittently. Undoubtedly many patients behave rationally in the protected environment of a mental hospital or even of a prison, and cannot stand the pressure of life outside but react in some anti-social way with the purpose, often quite unrealized, of getting under cover again. Once inside they cannot be called certifiably insane. There was no doubt that O'Sullivan was a public danger. Perhaps such difficult problems of delinquency will only be solved when prisons become really reformatory and provision for mentally unstable prisoners can be made without the rigid formality of certifying them insane.

AN IMPERSONATOR CONVICTED

One Lionel William Weekes was convicted last month before the Resident Magistrate of Nairobi[2] of making a false declaration for the purpose of procuring a passport, and with posing and practising as a doctor. He made out a passport declaration form under the name of William Edwin Weekes and stated that he was a physician. He put a signboard outside his house in Nairobi with the inscription "Dr. W. E. Weekes." Pleading guilty he said that when he came to the country he had no intention of posing or practising as a doctor. The police agreed that in his five years in Kenya he had worked at various mission stations and done quite a lot of surgery, and there had been no complaints against him. He said he really did know his job, as he had been within four months of his final examination when he had taken up a position. He was fined 200s., with one month's imprisonment in default. He owes an apology to the real doctor, William Edwin Weekes, who is on the Colonial list of the *Medical Register* and practises at Exeter, Ontario.

[1] *Times*, May 20, 1938.
[2] *East African Standard*, May 2, 1938.

Medical News

Professor John Beattie will deliver three Arris and Gale Lectures at the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., on June 24, 27, and 29, at 5 p.m. His subject is: "Recent Work in Experimental Surgery." The lectures are open to medical practitioners and advanced students.

Dr. Robert Hutchison, President of the Royal College of Physicians of London and consulting physician to the hospital, will present prizes to successful students of the London Hospital Medical College on Thursday, June 30, at 3 p.m.

H.R.H. the Duchess of Gloucester will open an exhibition of photographs illustrating African progress in Kenya at the Imperial Institute, South Kensington, on Monday, June 20, at 3 p.m.

The Prosser White Annual Oration before the St. John's Hospital Dermatological Society will be delivered by Professor Charles Flandin at the Royal Society of Medicine, 1, Wimpole Street, W., on Wednesday, June 22, at 5 p.m. His subject is "Recent Advances in Leprosy and the Methods Adopted for Dealing with the Problem in France."

The thirteenth annual Macalister Lecture will be delivered at the National Temperance Hospital on Thursday, June 30, at 9 p.m. by Dr. Leonard Williams, whose subject is "This Mortal Coil." All medical practitioners are invited to be present, and may bring friends (ladies or gentlemen). Smoking, tea and coffee.

The eighth meeting of the Conferences of the International Committee of Military Medicine will be held at Luxemburg from July 1 to 4. Official acceptances have already been received from twenty-five nations. In addition to the various technical discussions, consideration will be given to the sanitary organization involved by a mobilized nation, and the protection of the civilian part of the community. Various excursions are being arranged. Fuller details of the programme of this meeting may be obtained from Colonel Voncken, Office International de Documentation de Médecine militaire, Liége.

The International Congress of Light will be held at Davos in Switzerland on July 29 and 30 under the presidency of Dr. Morikofer. The subjects for discussion will be light and climatology, the action of natural and artificial light on healthy organisms, and physiological and physical study of the therapeutic sources of light. Further information can be obtained from the secretary, Dr. Schreiber, Robert-Koch-Platz 1, Berlin.

On Thursday, June 23, at 5.30 p.m., the Marchioness of Carisbrooke will open the new premises of the Children's Centre of the Institute of Child Psychology at 6, Pembridge Villas, W., and at 6.30 p.m. Mr. Kenneth Lindsay, M.P., Parliamentary Secretary to the Board of Education, will open an exhibition of the work of the institute. The chair will be taken by Professor Winifred Cullis.

The Industrial Eye Injuries Committee of the Royal Eye Hospital has arranged an exhibition dealing with the prevention of industrial eye injuries. This will be opened at the hospital on Wednesday, June 22, at 3.15 p.m., by the Earl of Athlone, K.G.

H.R.H. the Duchess of Kent has consented to become President of The Babies' Club (Chelsea), 35, Danvers Street, S.W.3. This is the first infant welfare centre for the better-to-do classes; there are now three others in London.

The fourth international postgraduate course on *x*-ray diagnosis for physicians and surgeons will be held at Munich from July 8 to 14. Further information can be obtained from Akademie für ärztliche Fortbildung, Robert-Koch-Platz 2, Berlin, N.W.7.

Dr. Fred. M. Smith, professor of medicine at Iowa University, has been appointed editor of the *American Heart Journal* in succession to Dr. Lewis Conner, professor of clinical medicine at the Cornell University, New York, who has retired after acting as editor since the establishment of the journal in 1925.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Snoring

"Z." asks for suggestions for curing snoring. "My patient is a healthy young man aged 30. He has led an open-air life and is accustomed to sleep very soundly. He has always snored, and hitherto it has been merely amusing—but he has recently married! He has no nasal obstruction or enlarged tonsils. He can snore on his side as well as on his back; he is even able to snore with his mouth tied up. Is there perhaps some sort of self-retaining speculum for keeping the alae nasi open?"

Human Embryos Wanted

Dr. MARY CRIPPS writes to thank those readers who very kindly forwarded specimens of early human embryos. As she still requires a few more from the fifth to the seventh week of pregnancy she will be glad of even preserved specimens from retiring colleagues who have no further use for them. Specimens should be addressed to her at the Histological Department, Royal College of Physicians, Forest Road, Edinburgh. They must be packed in accordance with Post Office regulations.

Income Tax

Expenses—Schedule E

"Major, R.A.M.C.," explains that he is allowed 4d. per mile for the use of his car while on duty, but regards that rate as insufficient to cover the cost; can he make a claim to deduct the balance as an expense for income tax purposes? Also, can he not claim a deduction for the cost of professional books?

*** The allowance is governed by the Rule in Schedule E that deductible expenses must be incurred "wholly exclusively and necessarily in the performance of the duties of the office." It is settled law that this does not extend to the cost of travelling from the residence to a fixed place of employment, but only to travelling about while on duty. Consequently it happens frequently that the income tax allowance is smaller than the total cost of running a car, the latter covering private or semi-private use and, sometimes, the use of a more expensive car than is "necessary." What our correspondent would have to do to succeed would be to show that 4d. a mile was inadequate for the necessary official use, and so far as our experience goes such an attack on the employing authority's rate of allowance would not succeed before the Income Tax Commissioners. The question of professional literature came up in the case of Simpson *v.* Tate, and, in deciding in favour of the Revenue, Rowlatt J. said: "All taking in of professional literature and all that sort of expense, which enables a man to keep fit for what he is doing, are things which can none of them be blamed." That decision would conclude an appeal against our correspondent.

LETTERS, NOTES, ETC.

The Horse-shoe Club

In 1930 there was instituted an exchange of resident house-physicians between the Children's Hospital and the General Hospital, St. Louis, and the East London Hospital for Children (now the Princess Elizabeth of York Hospital for Children). To commemorate this association of medical workers on both sides of the Atlantic, and to cement the friendships that had been made, a club, called "The Horse-shoe Club" after a popular game played at St. Louis, was founded, and held its first meeting in May, 1932. This year it was felt by some of the founders that the membership was not representative enough, and that it had not the power for bringing together the American and British peoples that it could have if it were to consist of all medical men and women who had worked and resided in each other's country. And, as a start at the creation of this larger organization, a dinner was held at the Langham Hotel which was attended by British medical men and women who had studied in America, or who have been concerned in providing study facilities in this country for American colleagues, and by those who have been instrumental in providing financial and moral assistance for this type of work. Several American colleagues at present resident in London also attended. At this dinner those present were unanimous regarding the desirability of the aims of the club. Dr. Geoffrey Bourne, who was elected chairman, suggested that to make the most of the organization there should be two branches, complementary to one another, one in America and one in England. So far as the British branch of the club is concerned it will consist of three types of members: (*a*) medical men and women who have studied in America under a scholarship or otherwise for a period of at least six months; (*b*) medical men and women who grant facilities for American research workers in their departments; (*c*) non-medical men and women who give moral or other support for facilities for the above work. The honorary secretary, Dr. Leonard Findlay, 14, Wimpole Street, London, W.1, would be glad to hear from anyone who is eligible for membership. The subscription is one guinea per annum.

Death from a Wasp Sting

Dr. F. ALEXANDER (Wraysbury, Bucks) writes: I was called to a riverside bungalow on Bank Holiday at midnight to see a lady, aged 56, who had been stung by a wasp. She was dead on my arrival and had been so for half-an-hour or more. She had been sitting in the lounge after supper when two queen wasps flew into the room. The patient took off her shoe and knocked them to the floor; she thought both wasps had been killed. A few minutes later, when she stepped across the room, she trod on one of the wasps with her bare foot and was stung on the big toe. She complained of much pain, and about twenty minutes later she collapsed and died without regaining consciousness. It is very seldom that a wasp sting proves fatal in such a short time, but I believe the sting of a queen wasp is always more poisonous than that of an ordinary one. As the patient was suffering from cardiac disease and hyperpiesis this may have accounted for her collapse.

Medical Golf

The eighth spring meeting of the Sussex Medical and Dental Golfing Society was held on the links of the Crowborough Beacon Golf Club on June 5. The Rolls Hoare Cup was won by P. G. Roberts with a score of 88 − 17 = 71, and A. R. Elliott was second with 81 − 8 = 73. The afternoon round was a 4-ball foursome against bogey, which was won by A. C. Rumsey and P. G. Roberts with a score of 3 up, and J. McWhirter and T. N. Strange were second with 2 up.